SAMSUNG

GSM TELEPHONE

SGH-F490

SERVICE Manual

GSM TELEPHONE

CONTENTS

1. Safety Precautions
2. Specification
3. Product Function
4. Array course control
5. Exploded View and Parts List
6. Main Electrical Parts List
7. Block Diagrams
8. PCB Diagrams
9. Flow Chart of Troubleshooting
10. Reference data
11. Disassembly and Assembly Instructions

SAMSUNG ELECTRONICS

GSPN (Global Service Partner Network)

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1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
  Take specially care of tuning or test,
  because specificity of cellular phone is sensitive for surrounding interference(RF noise).

- Be careful to use a kind of magnetic object or tool,
  because performance of parts is damaged by the influence of magnetic force.

- Surely use a standard screwdriver when you disassemble this product,
  otherwise screw will be worn away.

- Use a thicken twisted wire when you measure level.
  A thicken twisted wire has low resistance, therefore error of measurement is few.

- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.

- Take specially care of soldering, because Land of PCB is small and weak in heat.

- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembling charger.

- Don't use as you pleases after change other material than replacement registered on SEC System. Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

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1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductor may be damaged easily by static electricity. Such parts are called by ESD (Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below. You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.

- Use earthed soldering steel when you connect or disconnect ESD.

- Use soldering removing tool to break static electricity. , otherwise ESD will be damaged by static electricity.

- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.

- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.

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2. Specification

2-1. GSM General Specification

	EGSM 900	DCS 1800	PCS 1900	WCDMA2100
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1920~1980 2110~2170
ARFCN range	0~124 & 975~1023	512~885	512~810	UL:9612~9888 DL:10562~10838
Tx/Rx spacing	45MHz	95MHz	80MHz	190MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	3.84Mcps
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	Frame length : 10ms Slot length: 0.667ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	QPSK HQPSK
MS Power	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm~ -50dBm
Power Class	4 (max +33dBm)	1 (max +30dBm)	1 (max +30dBm)	3 (max +24dBm)
Sensitivity	-102dBm	-100dBm	-100dBm	-106.7dBm
TDMA Mux	8	8	8	NA
Cell Radius	35Km	2Km	2Km	2Km

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2-2. GSM Tx Power Class

TX Power control level	GSM900
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	PCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

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3. Product Function

Main Function

- Full Touch Screen
- Bluetooth Class 2
- Extended GSM 900MHz & DCS1800MHz & PCS1900MHz &WCDMA/HSDPA2100MHz Quad Band
- Bar type
- Color LCD (262K TFT colors, 3.2", 240 x 432)
- Built-in 5Mega pixel and QCIF Camera
- Built-in MP3 Player
- GPRS Multi-slot Class 12
- Downloadable Game via JAVA
- 64 Polyphonic Ring Tone
- Sending Photo & Video by MMS or E-Mail
- VideoTelephony
- External Memory Card Socket (T-flash)
- 1000mAh Battery

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4. Array course control

4-1. Software Adjustments

1. JIG(GH80-03308A): Download, Trace, Calibration, etc

2. 0.4M Test cable(GH39-00886A): JIG to phone

3. 1.5M Test cable(GH39-00889A): JIG to phone

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4.Travel Adaptor(GH44-01702A)

5.Data Link Cable(GH39-00922A): USB cable

6.Serial cable(LJ39-00013A) : PC to JIG

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7. RF test cable(GH39-00397A): RF test

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4-2. Software Downloading

4-2-1. Downloading Binary Files

•Four binary files for downloading F490

–amss_compressed : Modem binary for communication function and user interface and various application

–Rsrc_F490_Open_Europe_Common.rc1: Files need for each application

–Rsrc2_F490(Low).rc2 : Power on/off animation

–FactoryFs_F490_Open_Europe_Common.ffs : Default file system to be put into in initial production

4-2-2. Pre-requsite for Downloading

•Downloader Program (**MultiLoader V5.30**)

•SGH-F490 Mobile Phone

•USB Data Link Cable

•Binary files

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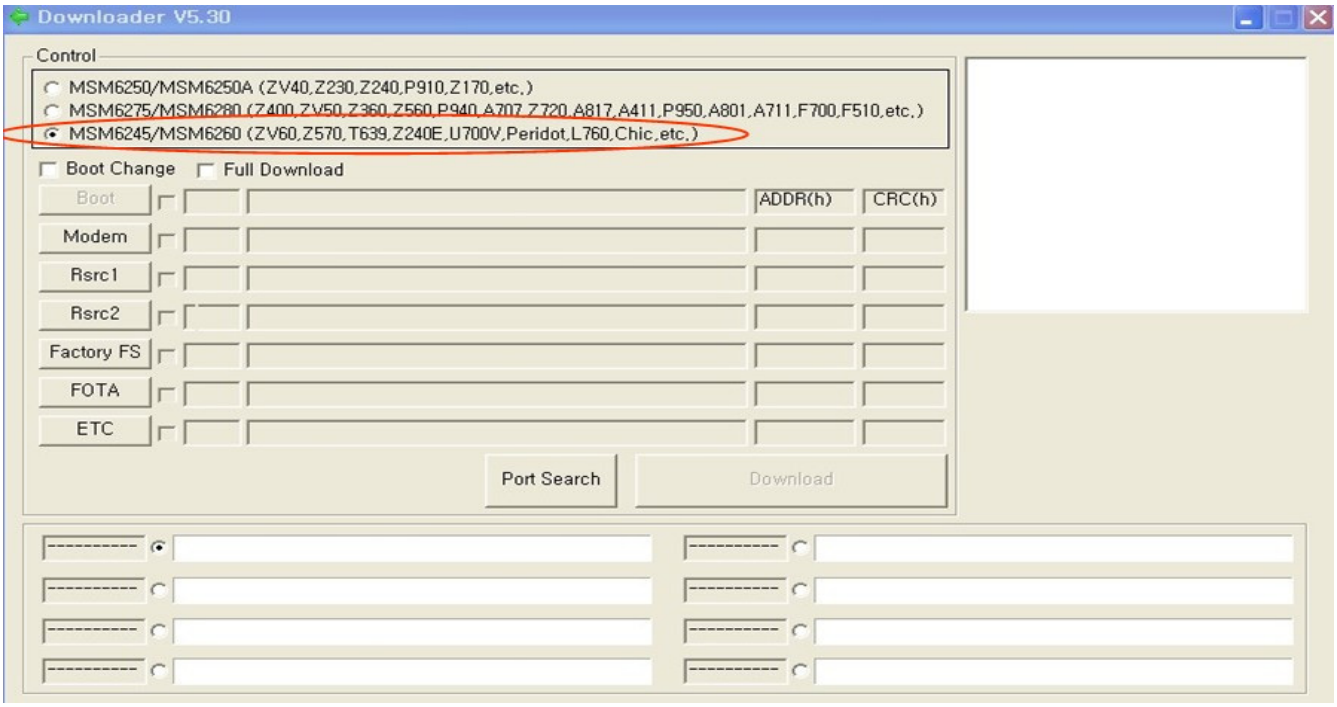
4-2-3. S/W Downloader Program

1. Boot the F490 by pressing 'power ON' + 'Camera hot key' + 'Volume Up Key' at the same time.
If you do properly, you can see the following message on Main LCD "Download"

2. Load the binary download program by executing the "**MultiLoader V5.30.exe**".
And the Check the **MSM6245/MSM6260**



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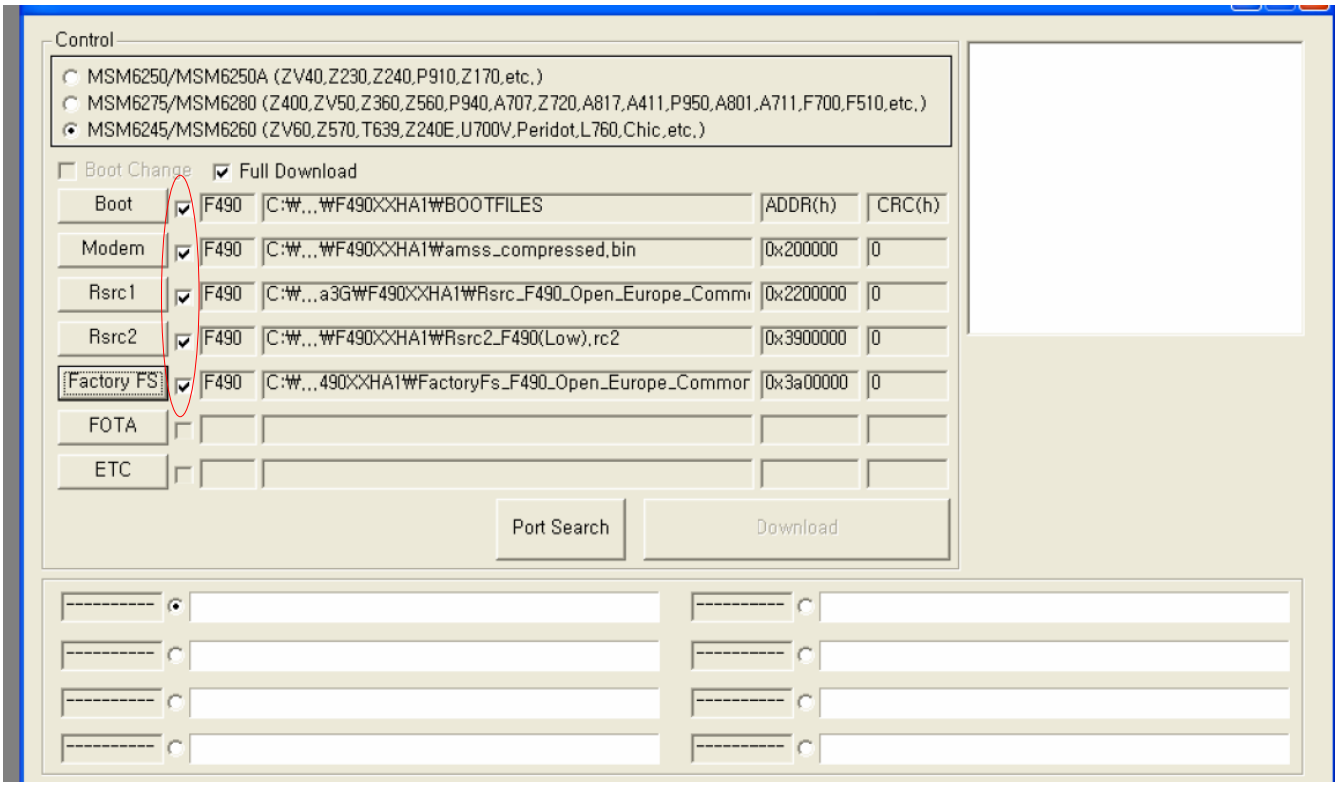
3. Select the check box what you want to download.



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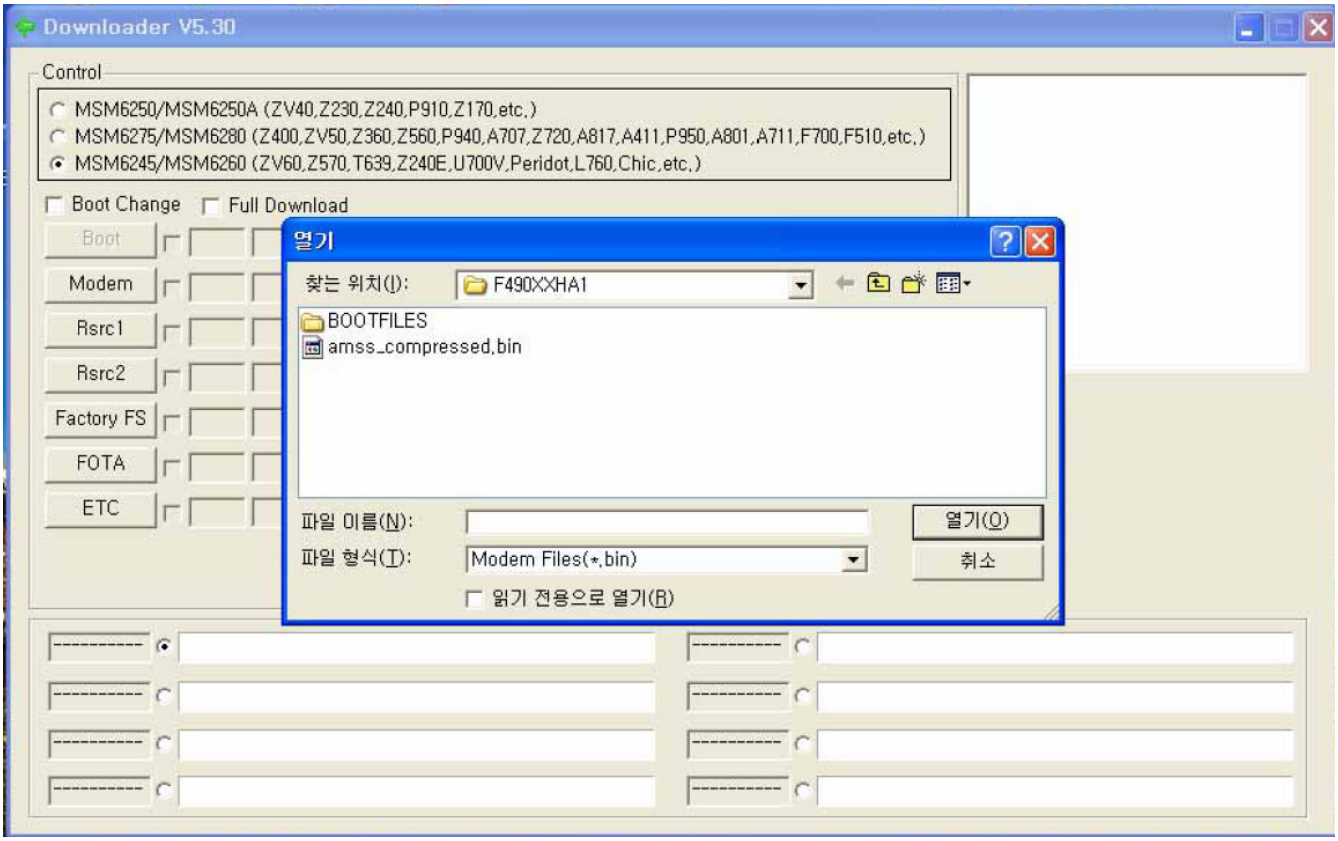
4. Select the binary file what you want to download



* Up to eight ports are supported.

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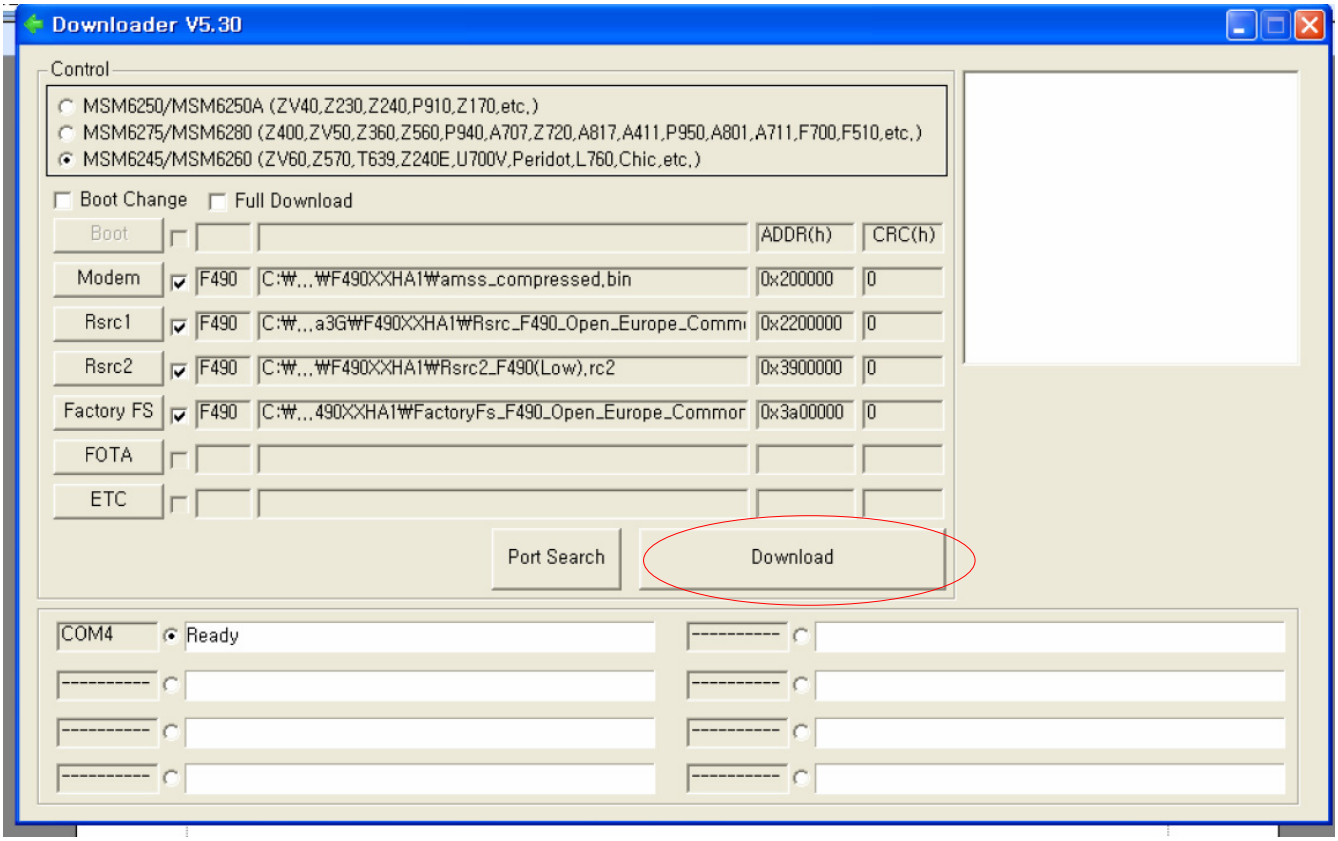
5. Now press the button 'DownLoad'.



6. When downloading is complete, UE reboot automatically.
-If there is difference in FactoryFS.bin, UE will format file system automatically.

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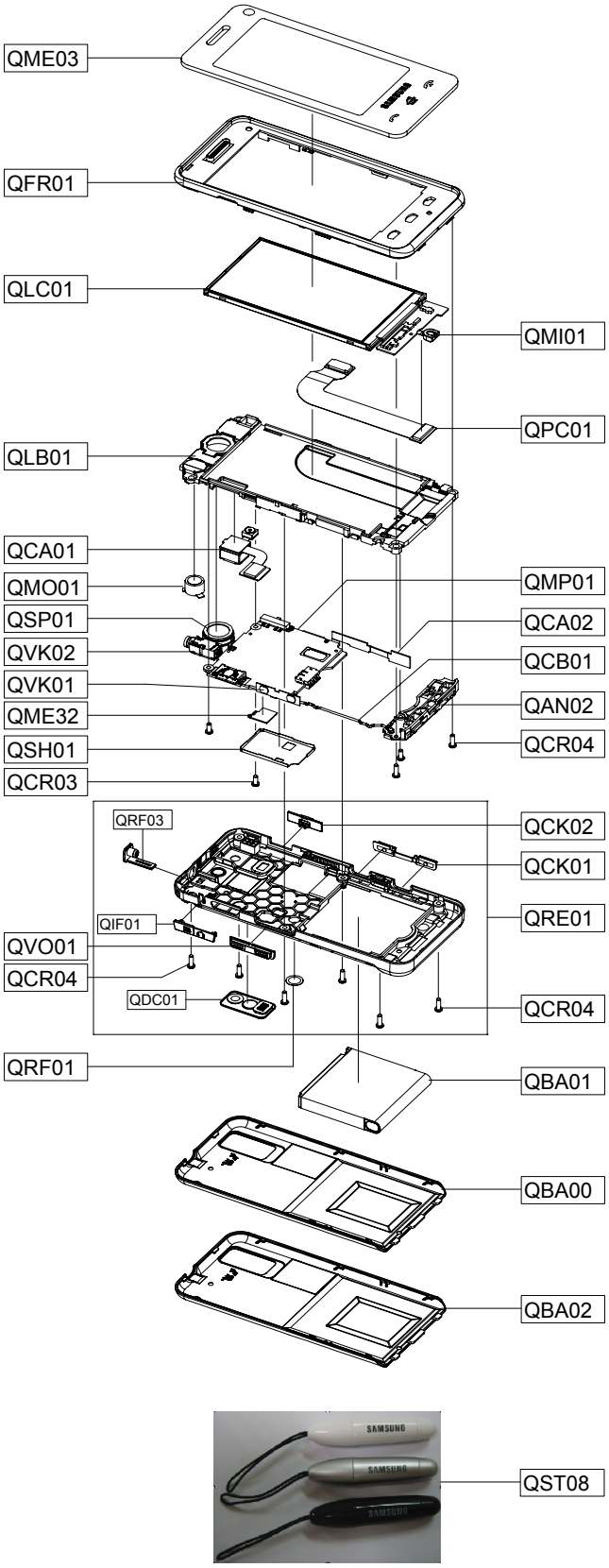
5. Exploded View and Parts List

5-1. Cellular phone Exploded View



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5-2. Cellular phone Parts List

Design LOC		Description	SEC CODE
QAN02		INTENNA-SGH F490	GH42-01406A
QBA00		PMO CASE-BATT	GH72-44834A
QBA01		INNER BATTERY PACK-1000MAH,BLK	GH43-02974A
QBA02		PMO CASE-BATT V2	GH72-46238A
QCA01		CAMERA MODULE-SGH F490	GH59-05166A
QCA02		KEY FPCB-CAM KEY FPCB ASS'Y	GH59-05137A
QCB01		COAXIAL CABLE-SGHE490 ANT CABL	GH39-00674A
QCK01		PMO KEY-CAMERA	GH72-46638A
QCK02		PMO KEY-HOLD	GH72-46639A
QCR03		SCREW-MACHINE	6001-001811
QCR04		SCREW-MACHINE	6001-001479
QCR04		SCREW-MACHINE	6001-001479
QCR04		SCREW-MACHINE	6001-001479
QFR01		ASSY CASE-FRONT	GH98-06647A
QLB01		ASSY BRACKET-LCD	GH98-06649A
QLC01		LCD-SGH F490MODULE	GH07-01250A
QME03		UNIT-TOUCH PANEL	GH59-05361A
QME32		UNIT-FLASH FPCB	GH59-05136A
QMI01		MICROPHONE-ASSY-SGH F490	GH30-00449A
QMO01		MOTOR LINEAR VIBRATION-SCH F49	GH31-00401A
QMP01		PBA MAIN-SGH F490	GH92-04207A
QPC01		FPC-SLIDE FPCB	GH41-01945A
QRF01		TAPE-SHEET RF	GH74-36524A
QSH01		ICT SHIELD-COVER	GH70-03077A
QSP01		SPEAKER	3001-002281
QST08		ASSY ACCE-STYLUS PEN	GH98-02835H
QVK01		KEY FPCB-VOLUME KEY	GH59-05121A
QVK02		ASSY ETC-SGH-F490 EARJACK FPCB	GH59-05163A
QVO01		PMO KEY-VOLUME	GH72-46637A
QRE01		ASSY CASE-REAR	GH98-06648A
	QDC01	ASSY DECO-CAMERA	GH98-06650A
	QIF01	PMO COVER-IF	GH72-46635A
	QRF03	PMO COVER-EAR	GH72-46636A

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Description	SEC CODE
IC-MEMORY CARD	1109-001363
CBF INTERFACE-DLC APCBS10BBE(S	GH39-00922A
CBF INTERFACE-MIC CABLE(S20P,T	GH39-00948F
ADAPTOR-ATADS10EBE,BLK,EU	GH44-01702A
S/W CD-SGHF490PC STUDIO CD	GH46-00598A
UNIT-EARPHONE(BLK)	GH59-02261A
LABEL(P)-UNIT SEAL	GH68-00518B
LABEL(R)-WATER SOAK	GH68-09361A
LABEL(P)-OPEN MP3	GH68-11246A
MANUAL USERS-EU FRENCH	GH68-17275A
LABEL(R)-MAIN(FRAN)	GH68-17280B
BOX-UNIT(EU)	GH69-06359A
BOX-SLIP CASE(EU_NEW)	GH69-06454A
RMO RUBBER-LED BLOCK	GH73-11374A
VINYL-BOHO TSP	GH74-36523A
TAPE INSU-IF CONN	GH74-37028A
VINYL-BOHO MAIN	GH74-37232A
SPONGE-MEGA CAM	GH74-37442A
ASSY PACKING-HAAXEF(BEA/FRAN)	GH95-01298A
ASSY ACCE-PHONE POUCH	GH98-07723A
CBF SIGNAL-SPHA560 RF CABLE	GH39-00397A
CBF INTERFACE-SGH-L760 TEST CA	GH39-00886A
CBF INTERFACE-SGH-L760 TEST CA	GH39-00889A
INSTALL-TEST JIG BOX	GH80-03308A

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6. MAIN Electrical Parts List

SEC Code	Design LOC	Description	STATUS
0403-001547	D700	DIODE-ZENER	SA
0404-001172	D703	DIODE-SCHOTTKY	SA
0406-001215	D701	DIODE-TVS	SA
0406-001215	D702	DIODE-TVS	SA
0406-001237	D600	DIODE-TVS	SNA
0406-001237	D601	DIODE-TVS	SNA
0406-001254	D704	DIODE-TVS	SA
0406-001254	D705	DIODE-TVS	SA
0406-001254	D707	DIODE-TVS	SA
0406-001254	D708	DIODE-TVS	SA
0406-001254	D709	DIODE-TVS	SA
0406-001254	ZD500	DIODE-TVS	SA
0406-001254	ZD501	DIODE-TVS	SA
0406-001254	ZD502	DIODE-TVS	SA
0406-001254	ZD503	DIODE-TVS	SA
0406-001254	ZD504	DIODE-TVS	SA
0406-001254	ZD700	DIODE-TVS	SA
0406-001254	ZD701	DIODE-TVS	SA
0406-001254	ZD702	DIODE-TVS	SA
0406-001254	ZD703	DIODE-TVS	SA
0406-001254	ZD704	DIODE-TVS	SA
0406-001254	ZD705	DIODE-TVS	SA
0406-001275	ZD401	DIODE-TVS	SA
0407-001002	D400	DIODE-ARRAY	SA
0504-001113	TR400	TR-DIGITAL	SA
0801-003016	U601	IC-CMOS LOGIC	SA
1001-001336	U704	IC-ANALOG SWITCH	SA
1001-001405	U301	IC-ANALOG MULTIPLEX	SA
1001-001428	U504	IC-ANALOG MULTIPLEX	SA
1001-001428	U505	IC-ANALOG MULTIPLEX	SA
1001-001428	U506	IC-ANALOG MULTIPLEX	SA
1001-001428	U702	IC-ANALOG MULTIPLEX	SA
1001-001436	U510	IC-ANALOG SWITCH	SA
1001-001481	U302	IC-ANALOG SWITCH	SA
1003-002047	U703	IC-MOTOR DRIVER	SA
1108-000151	UME300	IC-MCP	SA
1201-002190	U501	IC-AUDIO AMP	SA
1201-002531	PAM101	IC-POWER AMP	SA
1201-002570	PAM100	IC-POWER AMP	SA
1201-002610	U500	IC-AUDIO AMP	SA
1202-001068	U502	IC-VOLTAGE COMP.	SA
1203-003523	U406	IC-POSI.FIXED REG.	SA
1203-003523	U408	IC-POSI.FIXED REG.	SA
1203-003737	U409	IC-POSI.FIXED REG.	SA
1203-003815	U701	IC-POSI.FIXED REG.	SA
1203-004339	U403	IC-MULTI REG.	SA
1203-004340	U402	IC-MULTI REG.	SA
1203-004340	U404	IC-MULTI REG.	SA
1203-004453	U407	IC-DC/DC CONVERTER	SA

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SEC Code	Design LOC	Description	STATUS
1203-004548	U602	IC-DC/DC CONVERTER	SA
1203-004727	U405	IC-DC/DC CONVERTER	SA
1203-004728	U508	IC-POSI.FIXED REG.	SA
1203-004728	U509	IC-POSI.FIXED REG.	SA
1203-004776	U600	IC-POSI.FIXED REG.	SA
1203-004776	U603	IC-POSI.FIXED REG.	SA
1203-004778	U401	IC-POWER SUPERVISOR	SA
1203-004819	U604	IC-POSI.FIXED REG.	SA
1203-004838	U400	IC-BATTERY	SA
1205-002784	U410	IC-SWITCH	SA
1205-003228	U503	IC-CODEC	SA
1205-003281	UCP300	IC-MODEM	SA
1205-003288	U700	IC-LCD CONTROLLER	SA
1205-003297	U201	IC-TRANSCEIVER	SA
1404-001224	VR300	THERMISTOR-NTC	SA
2007-000138	R108	R-CHIP	SA
2007-000138	R322	R-CHIP	SA
2007-000138	R328	R-CHIP	SA
2007-000138	R515	R-CHIP	SA
2007-000138	R516	R-CHIP	SA
2007-000138	R517	R-CHIP	SA
2007-000138	R535	R-CHIP	SA
2007-000138	R707	R-CHIP	SA
2007-000138	R726	R-CHIP	SA
2007-000140	R314	R-CHIP	SA
2007-000140	R502	R-CHIP	SA
2007-000140	R504	R-CHIP	SA
2007-000140	R520	R-CHIP	SA
2007-000140	R521	R-CHIP	SA
2007-000140	R529	R-CHIP	SA
2007-000140	R530	R-CHIP	SA
2007-000143	R318	R-CHIP	SA
2007-000143	R509	R-CHIP	SA
2007-000143	R510	R-CHIP	SA
2007-000144	R415	R-CHIP	SA
2007-000148	R413	R-CHIP	SA
2007-000157	R416	R-CHIP	SA
2007-000160	R505	R-CHIP	SA
2007-000160	R508	R-CHIP	SA
2007-000162	R330	R-CHIP	SA
2007-000162	R430	R-CHIP	SA
2007-000162	R431	R-CHIP	SA
2007-000162	R432	R-CHIP	SA
2007-000162	R531	R-CHIP	SA
2007-000162	R619	R-CHIP	SA
2007-000162	R631	R-CHIP	SA
2007-000162	R632	R-CHIP	SA
2007-000162	R704	R-CHIP	SA
2007-000162	R716	R-CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2007-000165	R513	R-CHIP	SA
2007-000169	R503	R-CHIP	SA
2007-000169	R506	R-CHIP	SA
2007-000170	R300	R-CHIP	SA
2007-000170	R507	R-CHIP	SA
2007-000170	R512	R-CHIP	SA
2007-000170	R621	R-CHIP	SA
2007-000171	L205	R-CHIP	SA
2007-000171	L405	R-CHIP	SA
2007-000171	R200	R-CHIP	SA
2007-000171	R201	R-CHIP	SA
2007-000171	R203	R-CHIP	SA
2007-000171	R207	R-CHIP	SA
2007-000171	R304	R-CHIP	SA
2007-000171	R305	R-CHIP	SA
2007-000171	R307	R-CHIP	SA
2007-000171	R317	R-CHIP	SA
2007-000171	R324	R-CHIP	SA
2007-000171	R400	R-CHIP	SA
2007-000171	R414	R-CHIP	SA
2007-000171	R420	R-CHIP	SA
2007-000171	R421	R-CHIP	SA
2007-000171	R422	R-CHIP	SA
2007-000171	R433	R-CHIP	SA
2007-000171	R434	R-CHIP	SA
2007-000171	R435	R-CHIP	SA
2007-000171	R500	R-CHIP	SA
2007-000171	R501	R-CHIP	SA
2007-000171	R511	R-CHIP	SA
2007-000171	R514	R-CHIP	SA
2007-000171	R601	R-CHIP	SA
2007-000171	R602	R-CHIP	SA
2007-000171	R611	R-CHIP	SA
2007-000171	R612	R-CHIP	SA
2007-000171	R613	R-CHIP	SA
2007-000171	R614	R-CHIP	SA
2007-000171	R616	R-CHIP	SA
2007-000171	R617	R-CHIP	SA
2007-000171	R625	R-CHIP	SA
2007-000171	R627	R-CHIP	SA
2007-000171	R628	R-CHIP	SA
2007-000171	R711	R-CHIP	SA
2007-000171	R712	R-CHIP	SA
2007-000171	R729	R-CHIP	SA
2007-000173	R610	R-CHIP	SA
2007-000173	R615	R-CHIP	SA
2007-001156	R404	R-CHIP	SA
2007-001156	R623	R-CHIP	SA
2007-001285	R205	R-CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2007-001285	R206	R-CHIP	SA
2007-001290	R327	R-CHIP	SA
2007-001319	R522	R-CHIP	SA
2007-001319	R523	R-CHIP	SA
2007-001319	R527	R-CHIP	SA
2007-001319	R528	R-CHIP	SA
2007-001319	R607	R-CHIP	SA
2007-001319	R701	R-CHIP	SA
2007-001319	R702	R-CHIP	SA
2007-001339	R334	R-CHIP	SA
2007-001339	R603	R-CHIP	SA
2007-002970	R533	R-CHIP	SA
2007-002970	R534	R-CHIP	SA
2007-002970	R536	R-CHIP	SA
2007-002970	R537	R-CHIP	SA
2007-003010	R539	R-CHIP	SA
2007-003010	R540	R-CHIP	SA
2007-007009	R110	R-CHIP	SA
2007-007009	R622	R-CHIP	SA
2007-007014	R308	R-CHIP	SA
2007-007014	R309	R-CHIP	SA
2007-007014	R310	R-CHIP	SA
2007-007014	R311	R-CHIP	SA
2007-007014	R312	R-CHIP	SA
2007-007014	R408	R-CHIP	SA
2007-007092	R608	R-CHIP	SA
2007-007092	R609	R-CHIP	SA
2007-007135	R313	R-CHIP	SA
2007-007306	R111	R-CHIP	SA
2007-007306	R112	R-CHIP	SA
2007-007314	R321	R-CHIP	SA
2007-007316	R403	R-CHIP	SA
2007-007317	R402	R-CHIP	SA
2007-007334	R418	R-CHIP	SA
2007-007334	R725	R-CHIP	SA
2007-007468	R406	R-CHIP	SA
2007-007741	R103	R-CHIP	SA
2007-007741	R424	R-CHIP	SA
2007-007741	R426	R-CHIP	SA
2007-007766	R329	R-CHIP	SA
2007-008046	R105	R-CHIP	SA
2007-008046	R106	R-CHIP	SA
2007-008052	R425	R-CHIP	SA
2007-008055	R427	R-CHIP	SA
2007-008055	R705	R-CHIP	SA
2007-008055	R717	R-CHIP	SA
2007-008419	R204	R-CHIP	SA
2007-008483	R718	R-CHIP	SA
2007-008483	R719	R-CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2007-008483	R720	R-CHIP	SA
2007-008483	R721	R-CHIP	SA
2007-008483	R722	R-CHIP	SA
2007-008516	R315	R-CHIP	SA
2007-008516	R316	R-CHIP	SA
2007-008516	R320	R-CHIP	SA
2007-008516	R524	R-CHIP	SA
2007-008516	R723	R-CHIP	SA
2007-008542	R306	R-CHIP	SA
2007-008542	R331	R-CHIP	SA
2007-008542	R332	R-CHIP	SA
2007-008542	R405	R-CHIP	SA
2007-008542	R411	R-CHIP	SA
2007-008542	R412	R-CHIP	SA
2007-008542	R437	R-CHIP	SA
2007-008542	R538	R-CHIP	SA
2007-008542	R618	R-CHIP	SA
2007-008542	R629	R-CHIP	SA
2007-008542	R634	R-CHIP	SA
2007-008542	R637	R-CHIP	SA
2007-008542	R732	R-CHIP	SA
2007-008542	R733	R-CHIP	SA
2007-008542	R734	R-CHIP	SA
2007-008542	R735	R-CHIP	SA
2007-008579	R101	R-CHIP	SA
2007-008579	R102	R-CHIP	SA
2007-008588	R107	R-CHIP	SA
2007-008588	R302	R-CHIP	SA
2007-008588	R303	R-CHIP	SA
2007-008588	R706	R-CHIP	SA
2007-008588	R710	R-CHIP	SA
2007-008806	R104	R-CHIP	SA
2007-008806	R109	R-CHIP	SA
2007-008806	R325	R-CHIP	SA
2007-008806	R410	R-CHIP	SA
2007-009111	R100	R-CHIP	SA
2007-009157	R626	R-CHIP	SA
2007-009170	R333	R-CHIP	SA
2007-009170	R519	R-CHIP	SA
2007-009170	R605	R-CHIP	SA
2007-009170	R727	R-CHIP	SA
2007-009171	R409	R-CHIP	SA
2007-009420	R202	R-CHIP	SA
2007-009801	R604	R-CHIP	SA
2007-009810	R620	R-CHIP	SA
2007-009866	R401	R-CHIP	SA
2007-009866	R525	R-CHIP	SA
2203-000233	C211	C-CER,CHIP	SA
2203-000233	C248	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-000233	C258	C-CER,CHIP	SA
2203-000233	C343	C-CER,CHIP	SA
2203-000233	C426	C-CER,CHIP	SA
2203-000233	C429	C-CER,CHIP	SA
2203-000233	C431	C-CER,CHIP	SA
2203-000254	C124	C-CER,CHIP	SA
2203-000254	C300	C-CER,CHIP	SA
2203-000254	C301	C-CER,CHIP	SA
2203-000254	C302	C-CER,CHIP	SA
2203-000254	C308	C-CER,CHIP	SA
2203-000254	C312	C-CER,CHIP	SA
2203-000254	C323	C-CER,CHIP	SA
2203-000278	C254	C-CER,CHIP	SA
2203-000278	C334	C-CER,CHIP	SA
2203-000278	C339	C-CER,CHIP	SA
2203-000278	C622	C-CER,CHIP	SA
2203-000278	C623	C-CER,CHIP	SA
2203-000330	C416	C-CER,CHIP	SA
2203-000330	C436	C-CER,CHIP	SA
2203-000386	C548	C-CER,CHIP	SA
2203-000438	C202	C-CER,CHIP	SA
2203-000438	C232	C-CER,CHIP	SA
2203-000438	C526	C-CER,CHIP	SA
2203-000438	C527	C-CER,CHIP	SA
2203-000489	C346	C-CER,CHIP	SA
2203-000725	C738	C-CER,CHIP	SA
2203-000812	C116	C-CER,CHIP	SA
2203-000812	C117	C-CER,CHIP	SA
2203-000812	C125	C-CER,CHIP	SA
2203-000812	C126	C-CER,CHIP	SA
2203-000812	C127	C-CER,CHIP	SA
2203-000812	C137	C-CER,CHIP	SA
2203-000812	C342	C-CER,CHIP	SA
2203-000812	C411	C-CER,CHIP	SA
2203-000812	C427	C-CER,CHIP	SA
2203-000812	C461	C-CER,CHIP	SA
2203-000812	C511	C-CER,CHIP	SA
2203-000812	C520	C-CER,CHIP	SA
2203-000812	C618	C-CER,CHIP	SA
2203-000812	C701	C-CER,CHIP	SA
2203-000812	C702	C-CER,CHIP	SA
2203-000812	C703	C-CER,CHIP	SA
2203-000812	C704	C-CER,CHIP	SA
2203-000812	C723	C-CER,CHIP	SA
2203-000812	C727	C-CER,CHIP	SA
2203-000812	C729	C-CER,CHIP	SA
2203-000812	C733	C-CER,CHIP	SA
2203-000812	C734	C-CER,CHIP	SA
2203-000854	C333	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-000854	C337	C-CER,CHIP	SA
2203-000854	C538	C-CER,CHIP	SA
2203-000854	C539	C-CER,CHIP	SA
2203-000854	C541	C-CER,CHIP	SA
2203-000854	C555	C-CER,CHIP	SA
2203-000995	C106	C-CER,CHIP	SA
2203-000995	C345	C-CER,CHIP	SA
2203-001033	C711	C-CER,CHIP	SA
2203-001153	C118	C-CER,CHIP	SA
2203-002487	C509	C-CER,CHIP	SA
2203-002487	C515	C-CER,CHIP	SA
2203-002677	C128	C-CER,CHIP	SA
2203-003054	C501	C-CER,CHIP	SA
2203-003054	C502	C-CER,CHIP	SA
2203-003054	C547	C-CER,CHIP	SA
2203-005052	L112	C-CER,CHIP	SA
2203-005057	L108	C-CER,CHIP	SA
2203-005057	L110	C-CER,CHIP	SA
2203-005234	C122	C-CER,CHIP	SA
2203-005234	L100	C-CER,CHIP	SA
2203-005281	C204	C-CER,CHIP	SA
2203-005450	L105	C-CER,CHIP	SA
2203-005450	L107	C-CER,CHIP	SA
2203-005482	C105	C-CER,CHIP	SA
2203-005482	C119	C-CER,CHIP	SA
2203-005482	C207	C-CER,CHIP	SA
2203-005482	C208	C-CER,CHIP	SA
2203-005482	C215	C-CER,CHIP	SA
2203-005482	C344	C-CER,CHIP	SA
2203-005482	C347	C-CER,CHIP	SA
2203-005482	C405	C-CER,CHIP	SA
2203-005482	C504	C-CER,CHIP	SA
2203-005482	C506	C-CER,CHIP	SA
2203-005482	C524	C-CER,CHIP	SA
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2203-005482	C543	C-CER,CHIP	SA
2203-005482	C550	C-CER,CHIP	SA
2203-005482	C553	C-CER,CHIP	SA
2203-005482	C558	C-CER,CHIP	SA
2203-005571	C428	C-CER,CHIP	SA
2203-005571	C430	C-CER,CHIP	SA
2203-005682	C107	C-CER,CHIP	SA
2203-005682	C110	C-CER,CHIP	SA
2203-005682	C111	C-CER,CHIP	SA
2203-005682	C115	C-CER,CHIP	SA
2203-005682	C136	C-CER,CHIP	SA
2203-005682	C221	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-005682	C238	C-CER,CHIP	SA
2203-005682	C316	C-CER,CHIP	SA
2203-005682	C330	C-CER,CHIP	SA
2203-005682	C707	C-CER,CHIP	SA
2203-005682	C708	C-CER,CHIP	SA
2203-005682	C709	C-CER,CHIP	SA
2203-005682	C710	C-CER,CHIP	SA
2203-005682	C712	C-CER,CHIP	SA
2203-005682	C739	C-CER,CHIP	SA
2203-005682	C740	C-CER,CHIP	SA
2203-005682	C741	C-CER,CHIP	SA
2203-005682	C742	C-CER,CHIP	SA
2203-005682	C744	C-CER,CHIP	SA
2203-005682	C745	C-CER,CHIP	SA
2203-005682	C747	C-CER,CHIP	SA
2203-005682	C749	C-CER,CHIP	SA
2203-005682	C750	C-CER,CHIP	SA
2203-005719	C338	C-CER,CHIP	SA
2203-005719	C340	C-CER,CHIP	SA
2203-005719	C518	C-CER,CHIP	SA
2203-005719	C529	C-CER,CHIP	SA
2203-005719	C542	C-CER,CHIP	SA
2203-005719	C556	C-CER,CHIP	SA
2203-005719	C614	C-CER,CHIP	SA
2203-005719	C615	C-CER,CHIP	SA
2203-005719	C743	C-CER,CHIP	SA
2203-005725	C108	C-CER,CHIP	SA
2203-005725	C112	C-CER,CHIP	SA
2203-005725	C132	C-CER,CHIP	SA
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2203-005725	C212	C-CER,CHIP	SA
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2203-005725	C222	C-CER,CHIP	SA
2203-005725	C226	C-CER,CHIP	SA
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2203-005725	C242	C-CER,CHIP	SA
2203-005725	C244	C-CER,CHIP	SA
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2203-005725	C260	C-CER,CHIP	SA
2203-005725	C263	C-CER,CHIP	SA
2203-005725	C265	C-CER,CHIP	SA
2203-005729	C549	C-CER,CHIP	SA
2203-005732	C200	C-CER,CHIP	SA

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2203-005732	C201	C-CER,CHIP	SA
2203-005734	C114	C-CER,CHIP	SA
2203-005736	C131	C-CER,CHIP	SA
2203-005736	C209	C-CER,CHIP	SA
2203-005736	C210	C-CER,CHIP	SA
2203-005736	C216	C-CER,CHIP	SA
2203-005736	C223	C-CER,CHIP	SA
2203-005736	C235	C-CER,CHIP	SA
2203-005736	C246	C-CER,CHIP	SA
2203-005736	C255	C-CER,CHIP	SA
2203-005736	C257	C-CER,CHIP	SA
2203-005736	C266	C-CER,CHIP	SA
2203-005736	C435	C-CER,CHIP	SA
2203-005736	C440	C-CER,CHIP	SA
2203-005806	C123	C-CER,CHIP	SNA
2203-005806	C130	C-CER,CHIP	SNA
2203-005806	C228	C-CER,CHIP	SNA
2203-005806	C320	C-CER,CHIP	SNA
2203-006047	C349	C-CER,CHIP	SA
2203-006048	C303	C-CER,CHIP	SA
2203-006048	C304	C-CER,CHIP	SA
2203-006048	C309	C-CER,CHIP	SA
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2203-006048	C407	C-CER,CHIP	SA
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2203-006048	C718	C-CER,CHIP	SA
2203-006048	C720	C-CER,CHIP	SA
2203-006048	C722	C-CER,CHIP	SA
2203-006048	C724	C-CER,CHIP	SA
2203-006048	C726	C-CER,CHIP	SA
2203-006048	C728	C-CER,CHIP	SA
2203-006048	C735	C-CER,CHIP	SA
2203-006048	R731	C-CER,CHIP	SA
2203-006091	C512	C-CER,CHIP	SA
2203-006091	C514	C-CER,CHIP	SA
2203-006121	C620	C-CER,CHIP	SA
2203-006137	C544	C-CER,CHIP	SA

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2203-006137	C551	C-CER,CHIP	SA
2203-006194	C129	C-CER,CHIP	SA
2203-006194	C135	C-CER,CHIP	SA
2203-006194	C319	C-CER,CHIP	SA
2203-006194	C331	C-CER,CHIP	SA
2203-006208	C453	C-CER,CHIP	SA
2203-006208	C627	C-CER,CHIP	SA
2203-006257	C517	C-CER,CHIP	SA
2203-006257	C519	C-CER,CHIP	SA
2203-006257	C530	C-CER,CHIP	SA
2203-006257	C532	C-CER,CHIP	SA
2203-006260	C621	C-CER,CHIP	SA
2203-006305	C521	C-CER,CHIP	SA
2203-006324	C438	C-CER,CHIP	SA
2203-006324	C454	C-CER,CHIP	SA
2203-006324	C628	C-CER,CHIP	SA
2203-006348	C412	C-CER,CHIP	SA
2203-006348	C414	C-CER,CHIP	SA
2203-006348	C437	C-CER,CHIP	SA
2203-006399	C418	C-CER,CHIP	SA
2203-006399	C434	C-CER,CHIP	SA
2203-006423	C134	C-CER,CHIP	SA
2203-006423	C205	C-CER,CHIP	SA
2203-006423	C206	C-CER,CHIP	SA
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2203-006423	C447	C-CER,CHIP	SA
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2203-006423	C601	C-CER,CHIP	SA
2203-006423	C602	C-CER,CHIP	SA
2203-006423	C603	C-CER,CHIP	SA
2203-006423	C607	C-CER,CHIP	SA
2203-006423	C608	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-006423	C609	C-CER,CHIP	SA
2203-006423	C610	C-CER,CHIP	SA
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2203-006423	C616	C-CER,CHIP	SA
2203-006423	C624	C-CER,CHIP	SA
2203-006423	C635	C-CER,CHIP	SA
2203-006423	C716	C-CER,CHIP	SA
2203-006423	C748	C-CER,CHIP	SA
2203-006466	C507	C-CER,CHIP	SA
2203-006466	C510	C-CER,CHIP	SA
2203-006562	C214	C-CER,CHIP	SA
2203-006562	C305	C-CER,CHIP	SA
2203-006562	C310	C-CER,CHIP	SA
2203-006562	C311	C-CER,CHIP	SA
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2203-006562	C559	C-CER,CHIP	SA
2203-006562	C560	C-CER,CHIP	SA
2203-006562	C625	C-CER,CHIP	SA
2203-006562	C626	C-CER,CHIP	SA
2203-006562	C629	C-CER,CHIP	SA
2203-006562	C631	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-006562	C632	C-CER,CHIP	SA
2203-006562	C633	C-CER,CHIP	SA
2203-006562	C637	C-CER,CHIP	SA
2203-006562	C638	C-CER,CHIP	SA
2203-006562	C705	C-CER,CHIP	SA
2203-006562	C706	C-CER,CHIP	SA
2203-006562	C713	C-CER,CHIP	SA
2203-006562	C714	C-CER,CHIP	SA
2203-006562	C715	C-CER,CHIP	SA
2203-006562	C737	C-CER,CHIP	SA
2203-006562	C746	C-CER,CHIP	SA
2203-006681	C317	C-CER,CHIP	SA
2203-006681	C318	C-CER,CHIP	SA
2203-006681	C327	C-CER,CHIP	SA
2203-006681	C348	C-CER,CHIP	SA
2203-006681	C350	C-CER,CHIP	SA
2203-006824	C249	C-CER,CHIP	SA
2203-006824	C251	C-CER,CHIP	SA
2203-006824	C307	C-CER,CHIP	SA
2203-006824	C400	C-CER,CHIP	SA
2203-006824	C401	C-CER,CHIP	SA
2203-006824	C403	C-CER,CHIP	SA
2203-006824	C417	C-CER,CHIP	SA
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2203-006841	C439	C-CER,CHIP	SA
2203-006841	C513	C-CER,CHIP	SA
2203-006841	C717	C-CER,CHIP	SA
2203-006841	C719	C-CER,CHIP	SA
2203-006841	C721	C-CER,CHIP	SA
2203-006841	C725	C-CER,CHIP	SA
2203-006841	C751	C-CER,CHIP	SA
2203-006872	C225	C-CER,CHIP	SA
2203-006872	C234	C-CER,CHIP	SA
2203-006872	C306	C-CER,CHIP	SA
2203-006872	C419	C-CER,CHIP	SA
2203-006872	C421	C-CER,CHIP	SA

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SEC Code	Design LOC	Description	STATUS
2203-006872	C424	C-CER,CHIP	SA
2203-006872	C425	C-CER,CHIP	SA
2203-006872	C432	C-CER,CHIP	SA
2203-006872	C433	C-CER,CHIP	SA
2203-006872	C536	C-CER,CHIP	SA
2203-006872	C730	C-CER,CHIP	SA
2203-006885	C619	C-CER,CHIP	SA
2203-006979	C227	C-CER,CHIP	SA
2203-006979	C262	C-CER,CHIP	SA
2404-001268	TA400	C-TA,CHIP	SA
2404-001268	TA401	C-TA,CHIP	SA
2404-001339	C402	C-TA,CHIP	SA
2404-001339	C406	C-TA,CHIP	SA
2404-001339	TA700	C-TA,CHIP	SA
2404-001381	TA101	C-TA,CHIP	SA
2404-001381	TA402	C-TA,CHIP	SA
2404-001381	TA403	C-TA,CHIP	SA
2404-001381	TA500	C-TA,CHIP	SA
2404-001381	TA600	C-TA,CHIP	SA
2404-001381	TA601	C-TA,CHIP	SA
2404-001411	TA701	C-TA,CHIP	SA
2404-001506	TA100	C-TA,CHIP	SA
2703-001231	L603	INDUCTOR-SMD	SNA
2703-001737	L202	INDUCTOR-SMD	SA
2703-001747	L109	INDUCTOR-SMD	SA
2703-001751	C203	INDUCTOR-SMD	SA
2703-002176	C100	INDUCTOR-SMD	SA
2703-002176	C101	INDUCTOR-SMD	SA
2703-002199	C102	INDUCTOR-SMD	SA
2703-002199	L508	INDUCTOR-SMD	SA
2703-002199	L509	INDUCTOR-SMD	SA
2703-002200	C103	INDUCTOR-SMD	SA
2703-002201	C109	INDUCTOR-SMD	SA
2703-002201	C113	INDUCTOR-SMD	SA
2703-002203	L101	INDUCTOR-SMD	SA
2703-002203	L104	INDUCTOR-SMD	SA
2703-002208	L111	INDUCTOR-SMD	SA
2703-002208	L207	INDUCTOR-SMD	SA
2703-002281	L106	INDUCTOR-SMD	SA
2703-002313	L200	INDUCTOR-SMD	SA
2703-002314	L102	INDUCTOR-SMD	SA
2703-002314	L103	INDUCTOR-SMD	SA
2703-002368	L116	INDUCTOR-SMD	SA
2703-002597	L206	INDUCTOR-SMD	SA
2703-002619	L403	INDUCTOR-SMD	SA
2703-002917	L204	INDUCTOR-SMD	SA
2703-003258	L400	INDUCTOR-SMD	SA
2703-003258	L401	INDUCTOR-SMD	SA
2703-003258	L402	INDUCTOR-SMD	SA

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SEC Code	Design LOC	Description	STATUS
2703-003260	L404	INDUCTOR-SMD	SA
2703-003260	L604	INDUCTOR-SMD	SA
2801-004339	OSC400	CRYSTAL-SMD	SA
2801-004573	OSC600	CRYSTAL-SMD	SA
2809-001280	TCX100	OSCILLATOR-VCTCXO	SA
2901-001353	F701	FILTER-EMI/ESD	SA
2901-001422	F703	FILTER-EMI SMD	SA
2901-001422	F704	FILTER-EMI SMD	SA
2901-001422	F705	FILTER-EMI SMD	SA
2901-001453	F700	FILTER-EMI SMD	SA
2901-001453	F702	FILTER-EMI SMD	SA
2904-001601	F102	FILTER-SAW	SA
2904-001604	F101	FILTER-SAW	SNA
2904-001628	F100	FILTER-SAW	SA
2904-001702	F200	FILTER-SAW	SA
2904-001789	F103	FILTER-SAW	SA
2910-000024	DUF100	DUPLEXER-SAW	SA
3301-001208	L501	BEAD-SMD	SA
3301-001208	L503	BEAD-SMD	SA
3301-001438	L500	BEAD-SMD	SA
3301-001438	L502	BEAD-SMD	SA
3301-001438	L504	BEAD-SMD	SA
3301-001438	L602	BEAD-SMD	SA
3301-001729	L505	BEAD-SMD	SA
3301-001729	L506	BEAD-SMD	SA
3301-001729	L507	BEAD-SMD	SA
3301-001729	R428	BEAD-SMD	SA
3301-001756	L510	BEAD-SMD	SA
3301-001756	L511	BEAD-SMD	SA
3301-001778	L600	CORE-FERRITE BEAD	SA
3301-001778	L601	CORE-FERRITE BEAD	SA
3408-001117	HOLDSW700	SWITCH-SLIDE	SA
3705-001358	RFS100	CONNECTOR-COAXIAL	SA
3705-001448	RFS101	CONNECTOR-COAXIAL	SA
3708-002015	SLC700	CONNECTOR-FPC/FFC/PIC	SA
3709-001465	SIM700	CONNECTOR-CARD EDGE	SA
3710-002467	MOT700	SOCKET-BOARD TO BOARD	SA
3710-002523	IFC600	SOCKET-INTERFACE	SA
3711-005728	HEA700	HEADER-BOARD TO BOARD	SA
3711-006028	HDC700	HEADER-BOARD TO BOARD	SA
3711-006256	BTC700	HEADER-BATTERY	SA
4202-001395	ANT200	ANTENNA-CHIP	SA
4302-001180	BAT400	BATTERY-LI(2ND)	SA
4709-001399	CPL100	COUPLER-DIRECTION	SA
4709-001546	U200	BLUETOOTH MODULE	SA
GH13-00061A	UCP600	IC ASIC-SGHF490	SA
GH70-02640A	SC200	ICT SHIELD-CAN CLIP	SA
GH70-02640A	SC201	ICT SHIELD-CAN CLIP	SA
GH70-02640A	SC202	ICT SHIELD-CAN CLIP	SA

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SEC Code	Design LOC	Description	STATUS
GH70-02640A	SC203	ICT SHIELD-CAN CLIP	SA
GH70-02640A	SC204	ICT SHIELD-CAN CLIP	SA
GH70-02640A	SC205	ICT SHIELD-CAN CLIP	SA

Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

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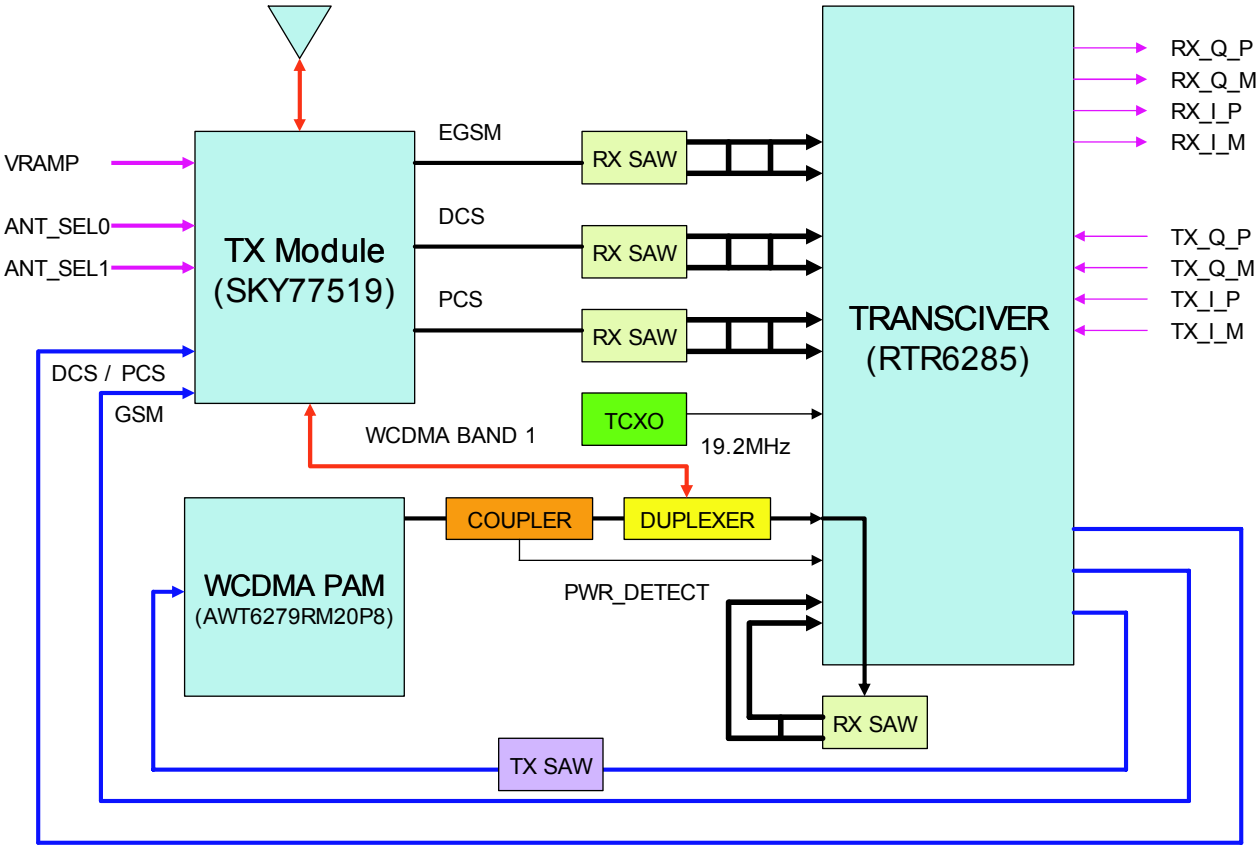
7. Block Diagrams

7-1. Functional Block Diagram



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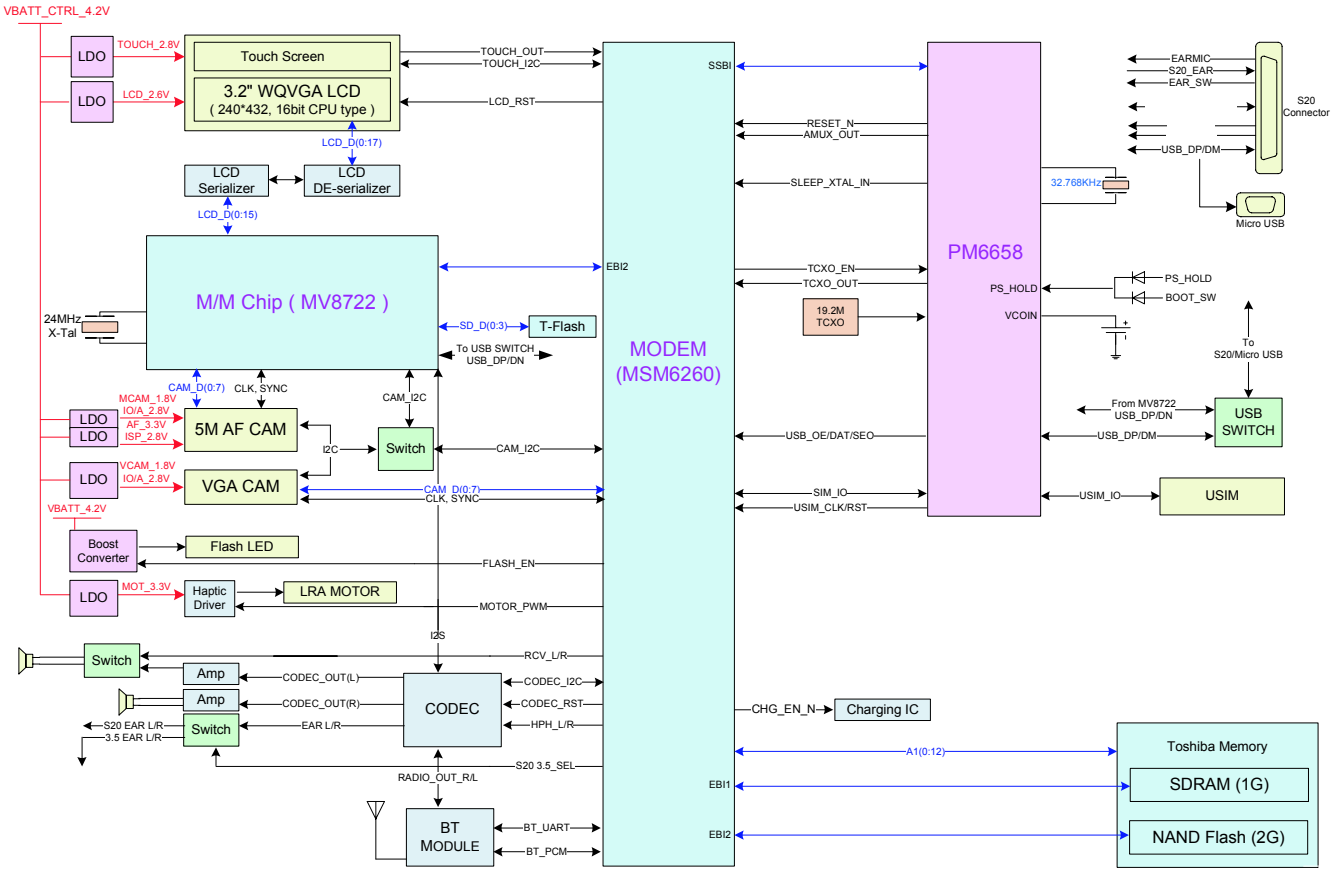
7-2. Baseband Block Diagram



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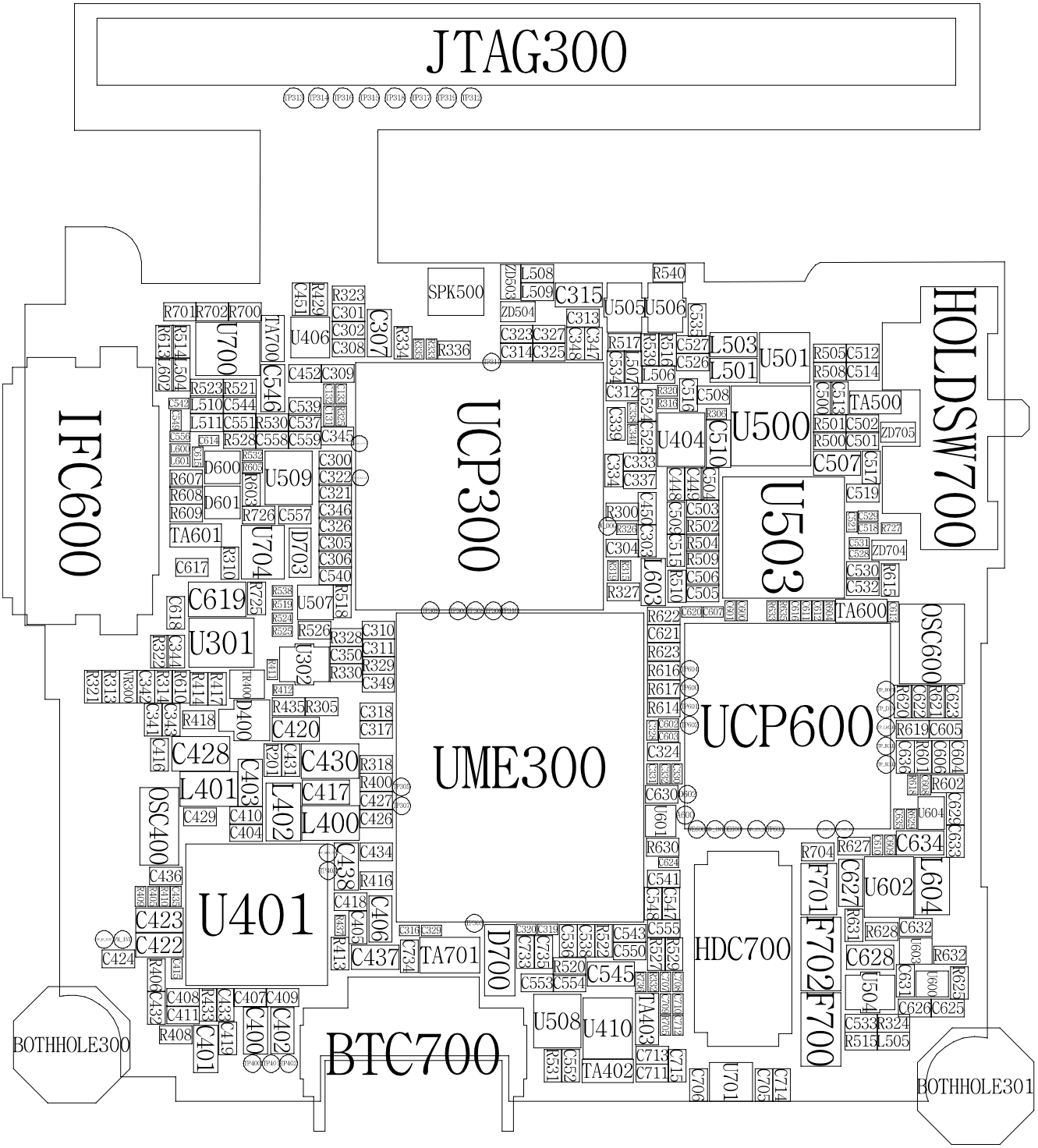
8. PCB Diagrams

1. Main top



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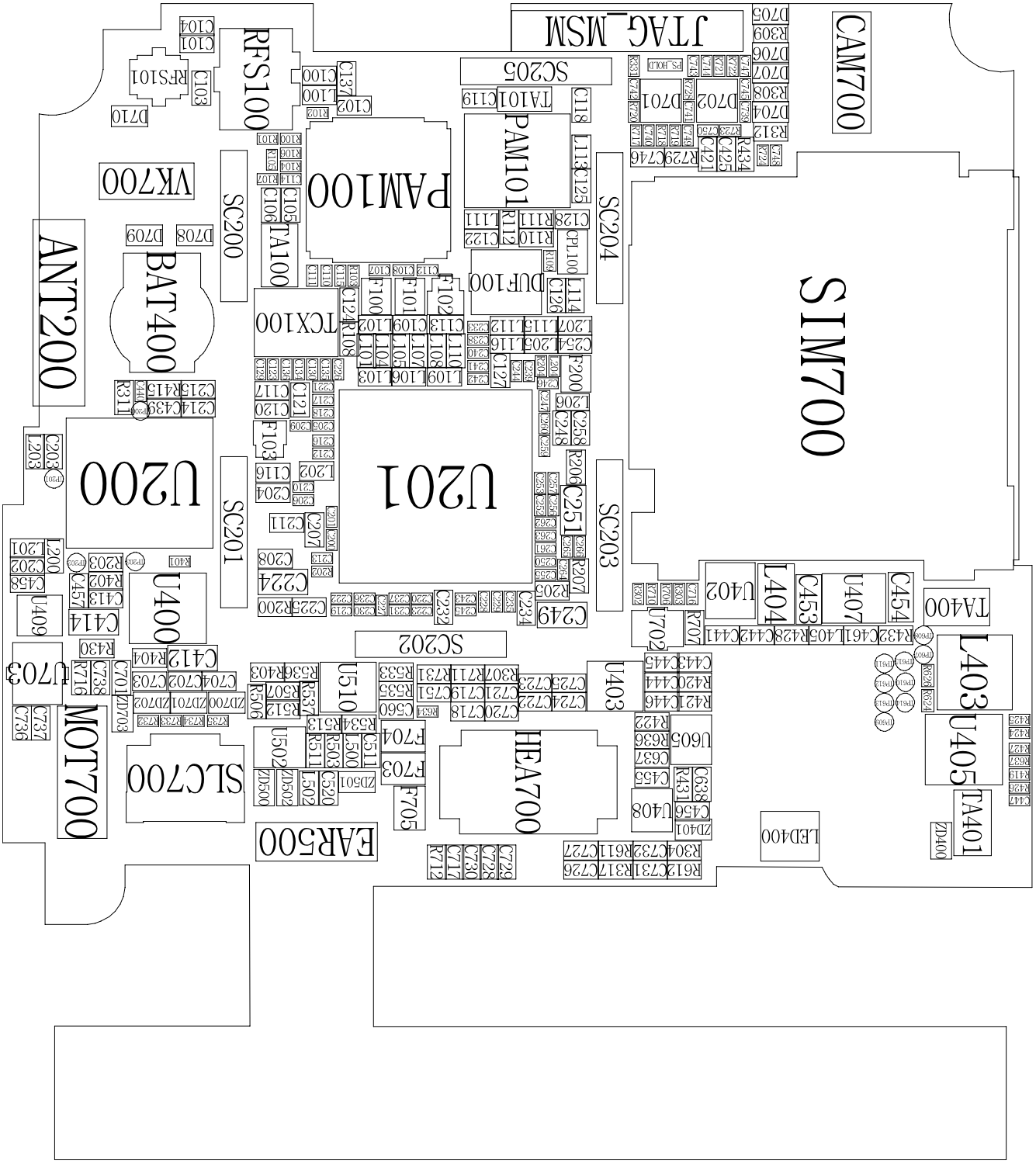
2. Main bottom



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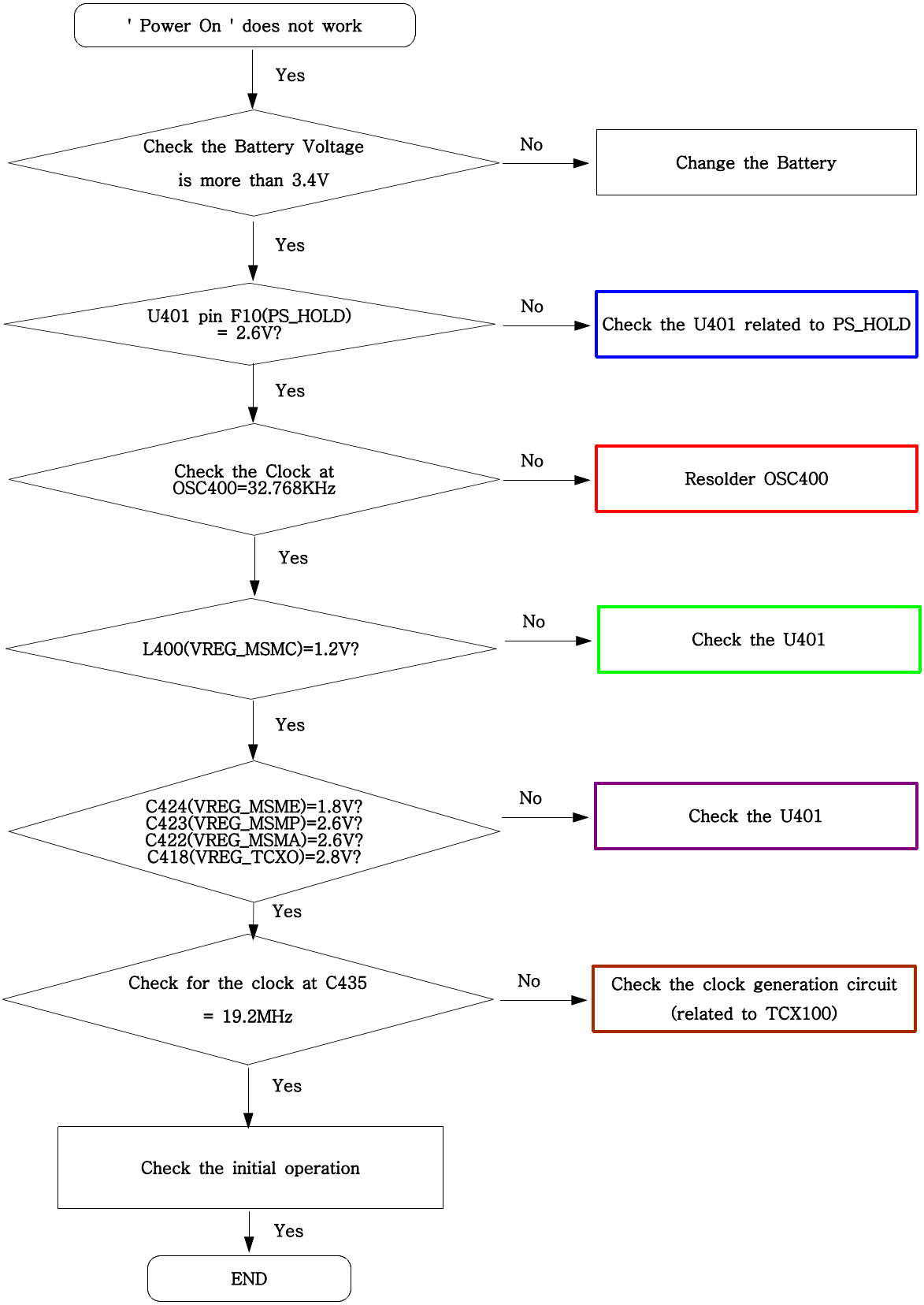
9. Flow Chart of Troubleshooting

9-1. Power On



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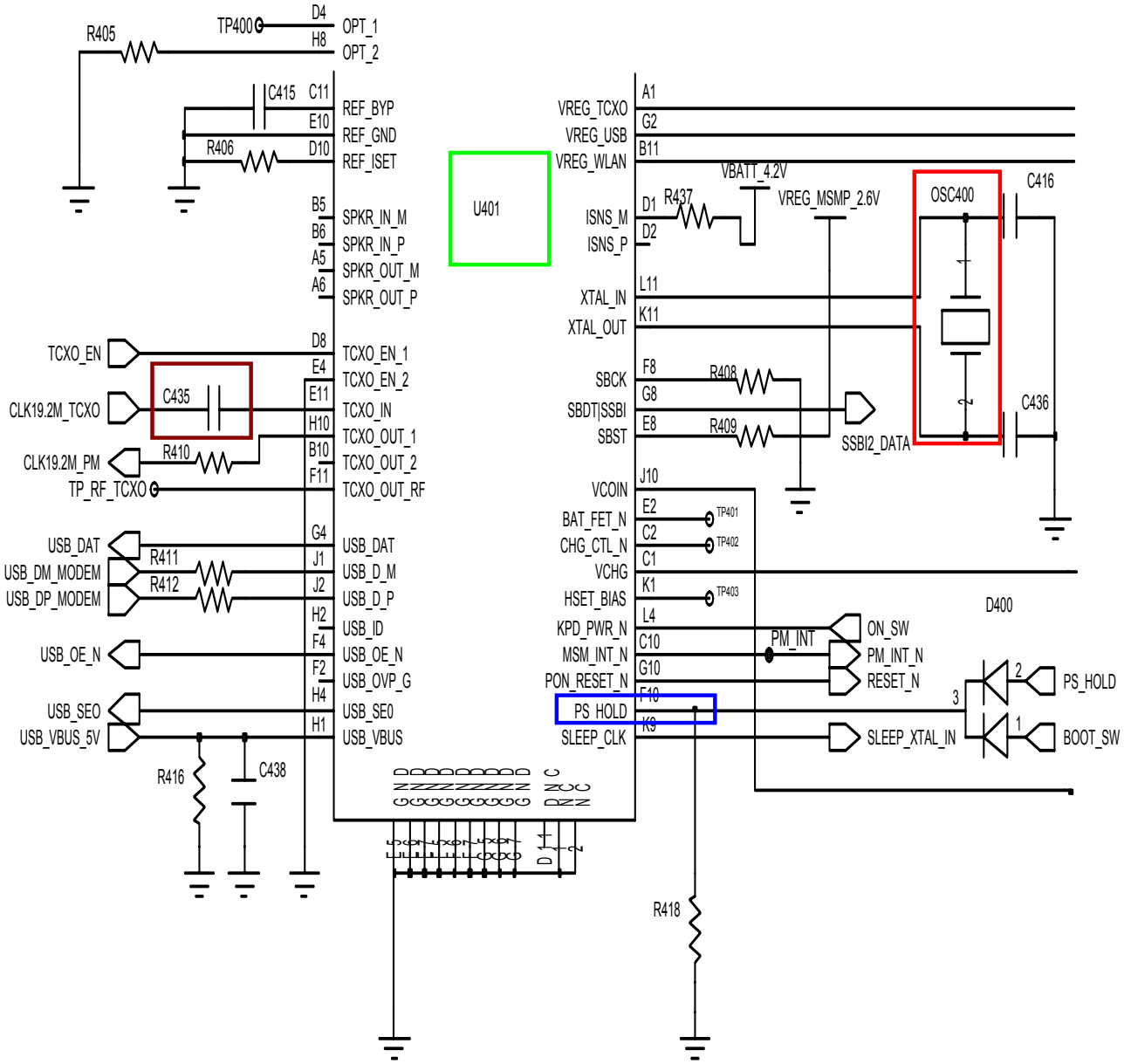

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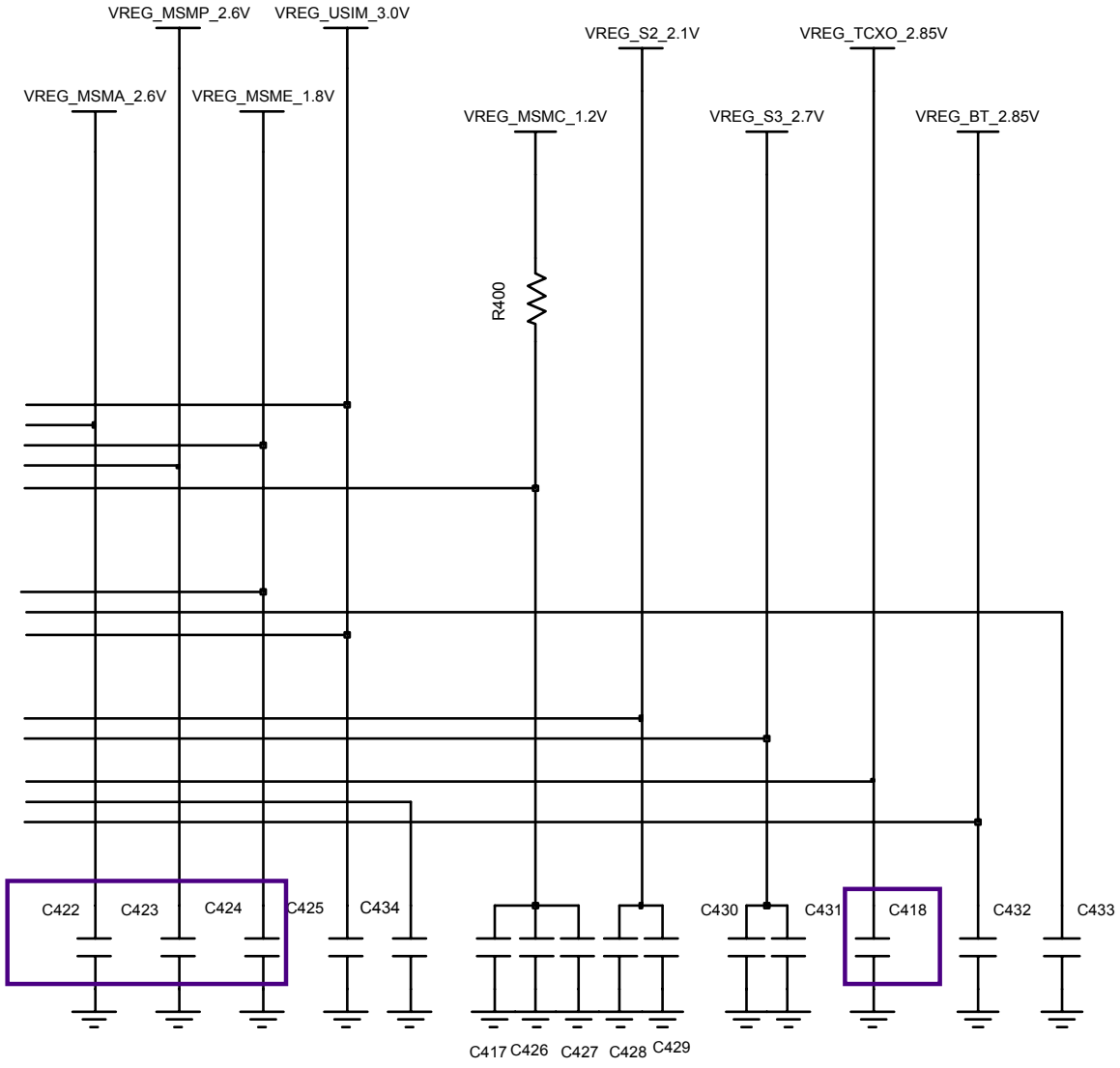

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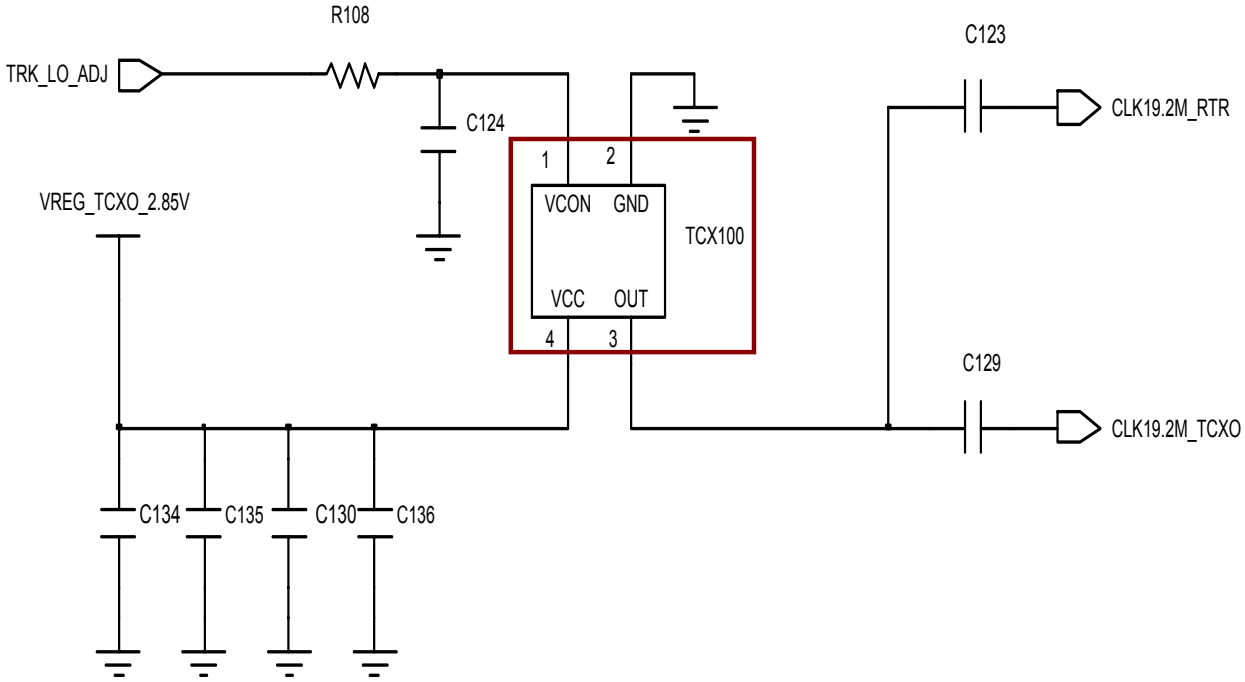

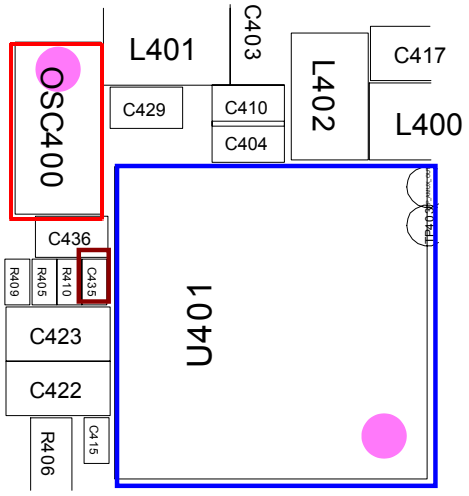

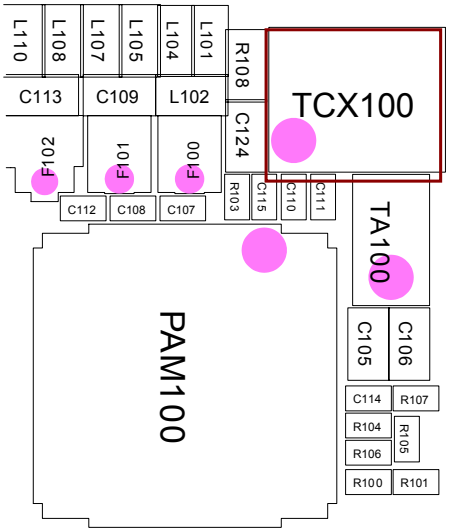

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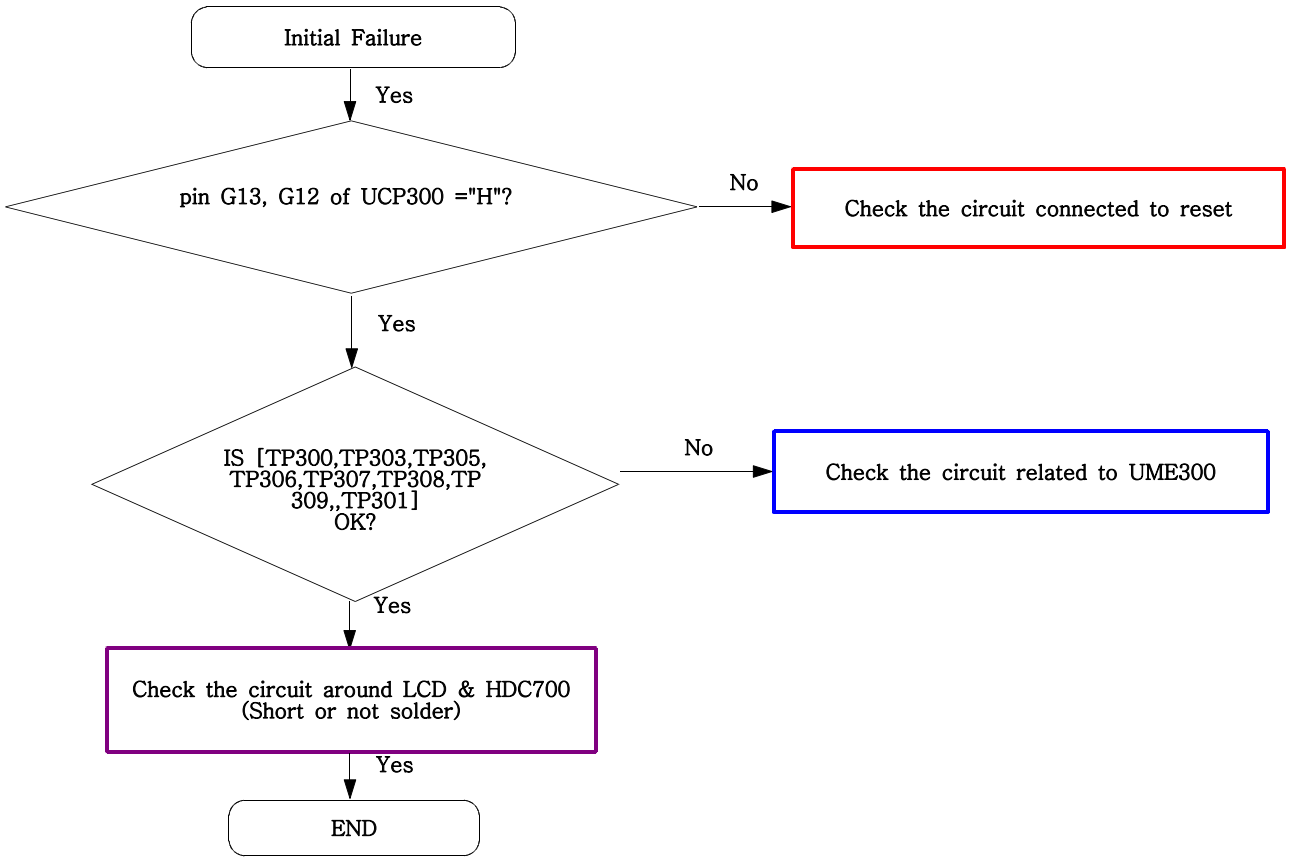
9-2. Initial



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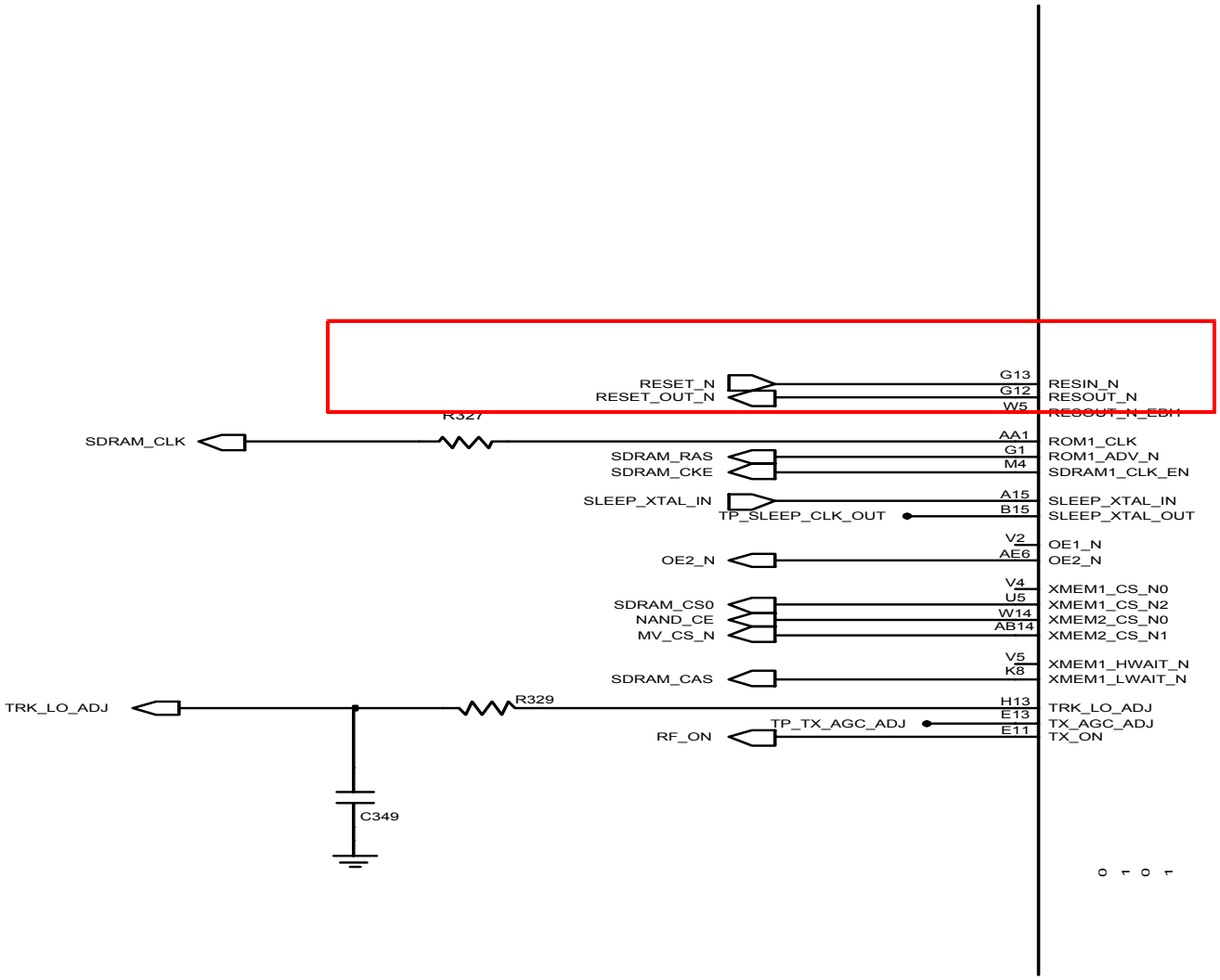

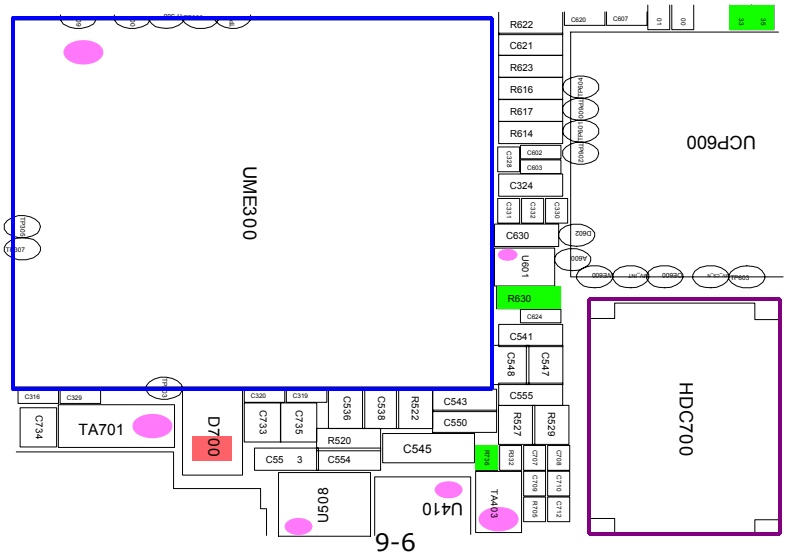

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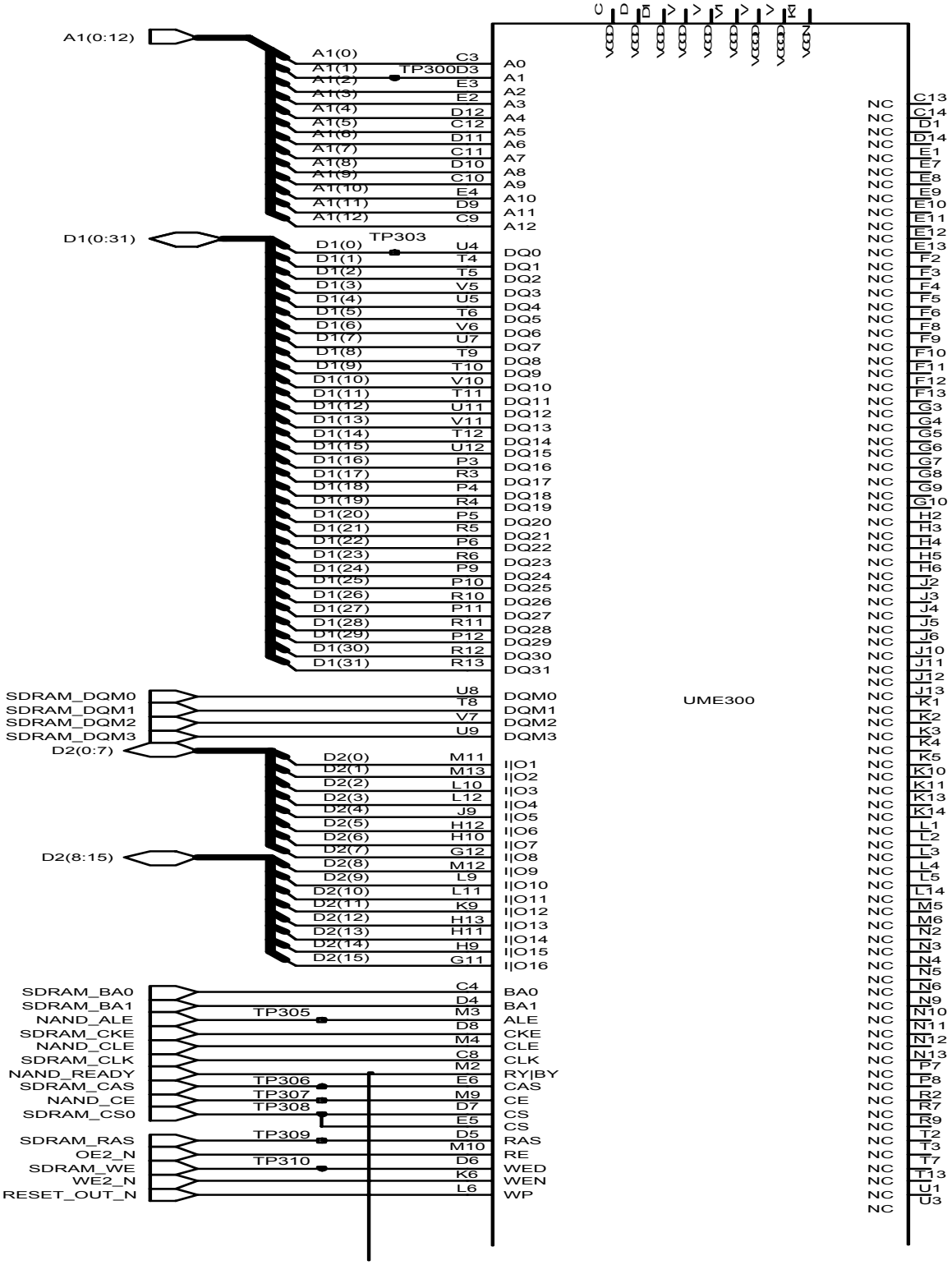

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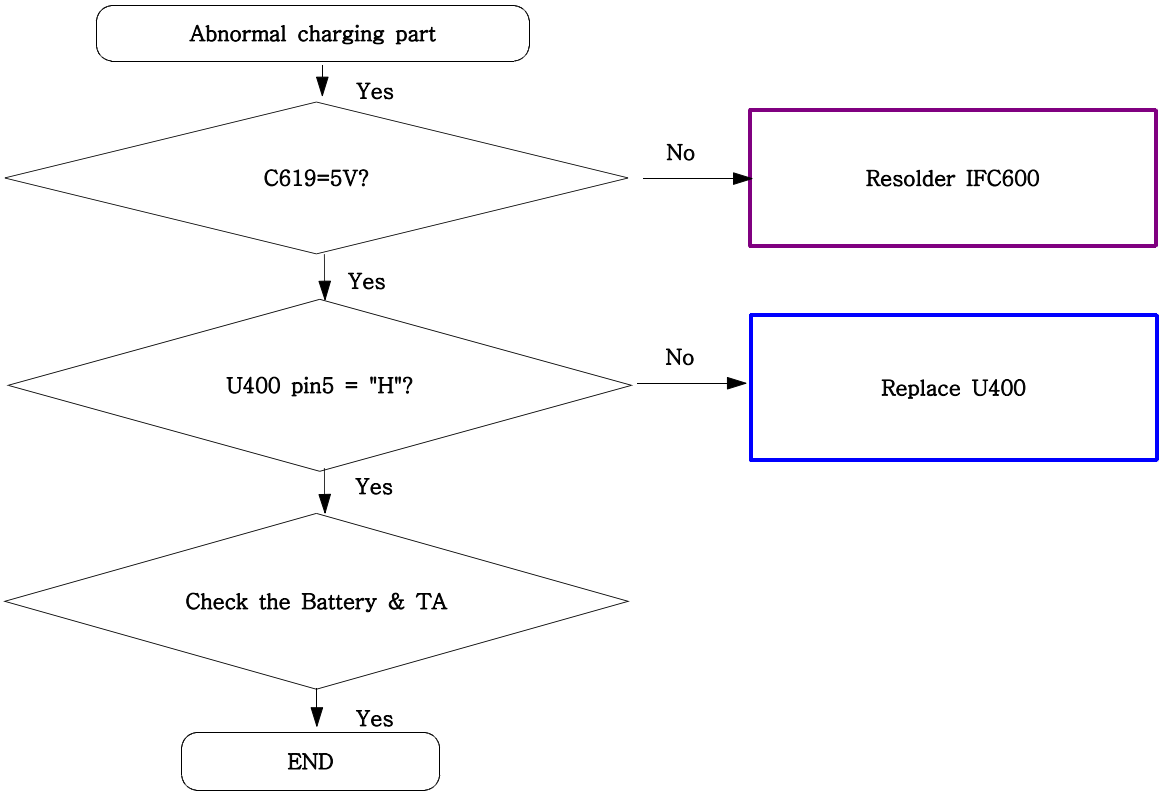
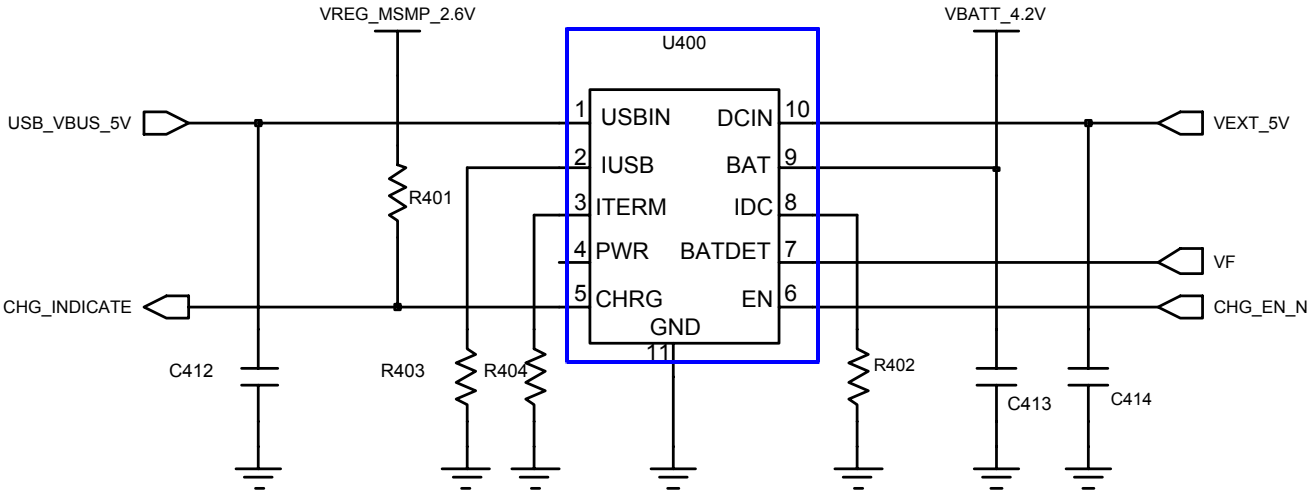
9-3. Charging Part





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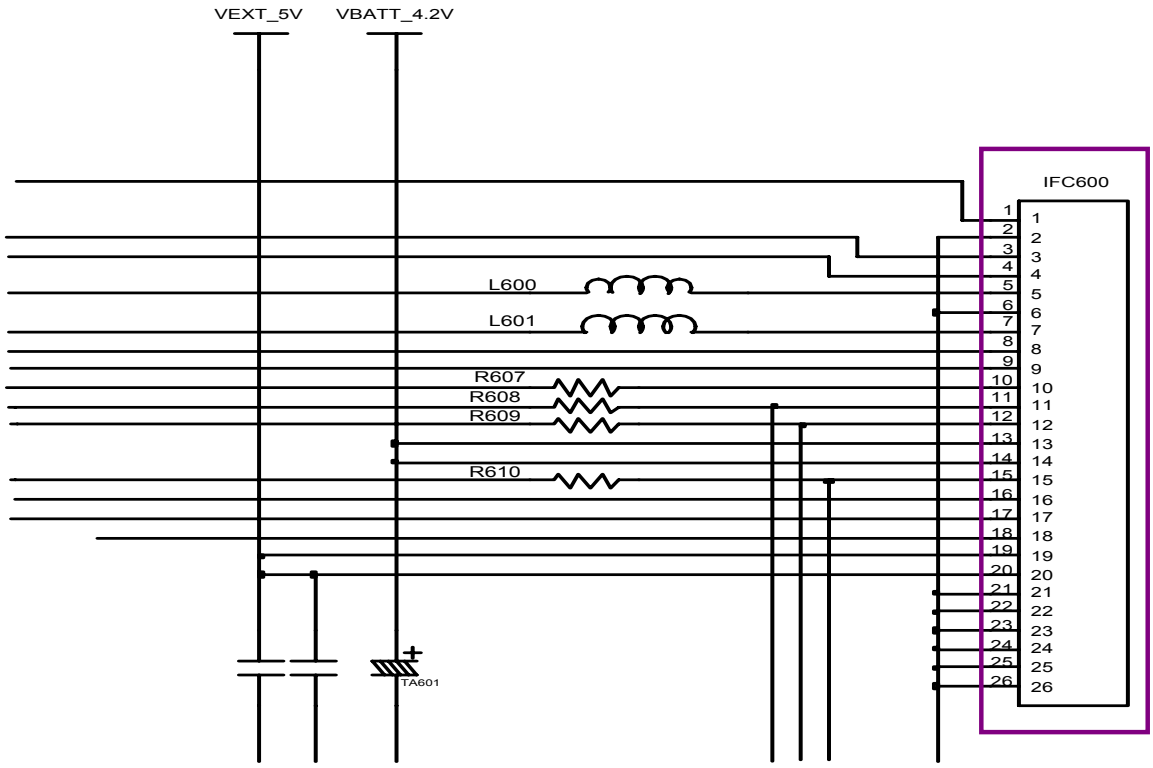

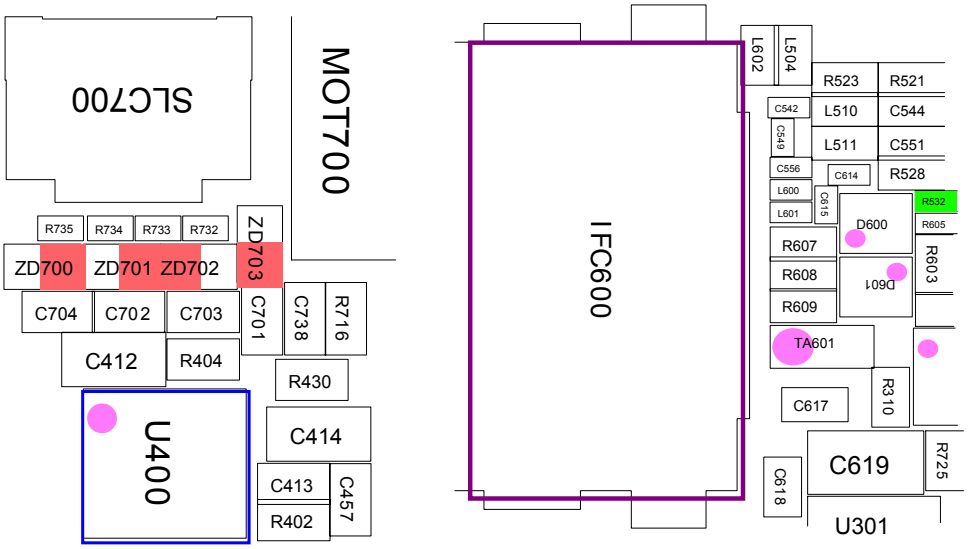

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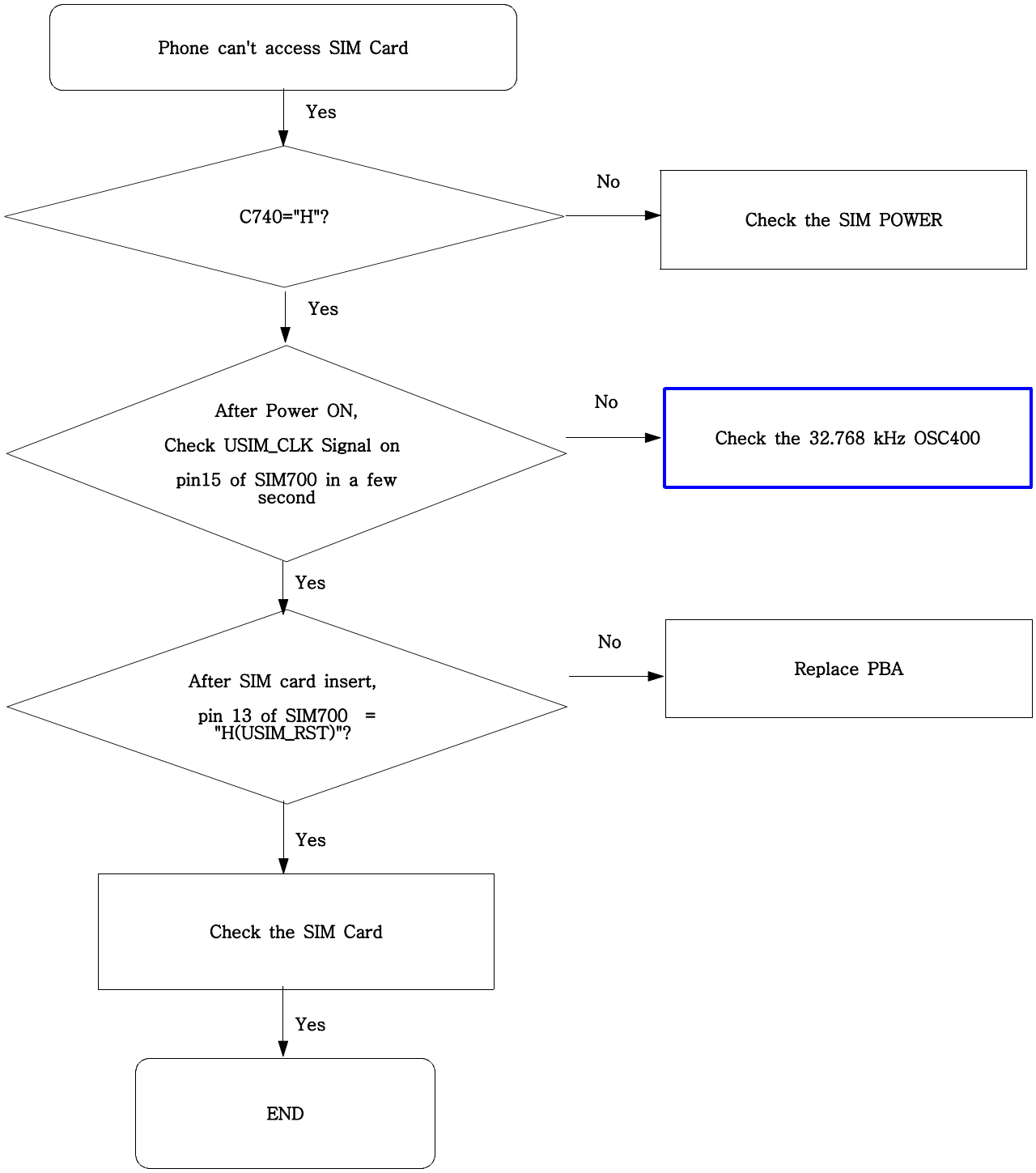
9-4. Sim Part



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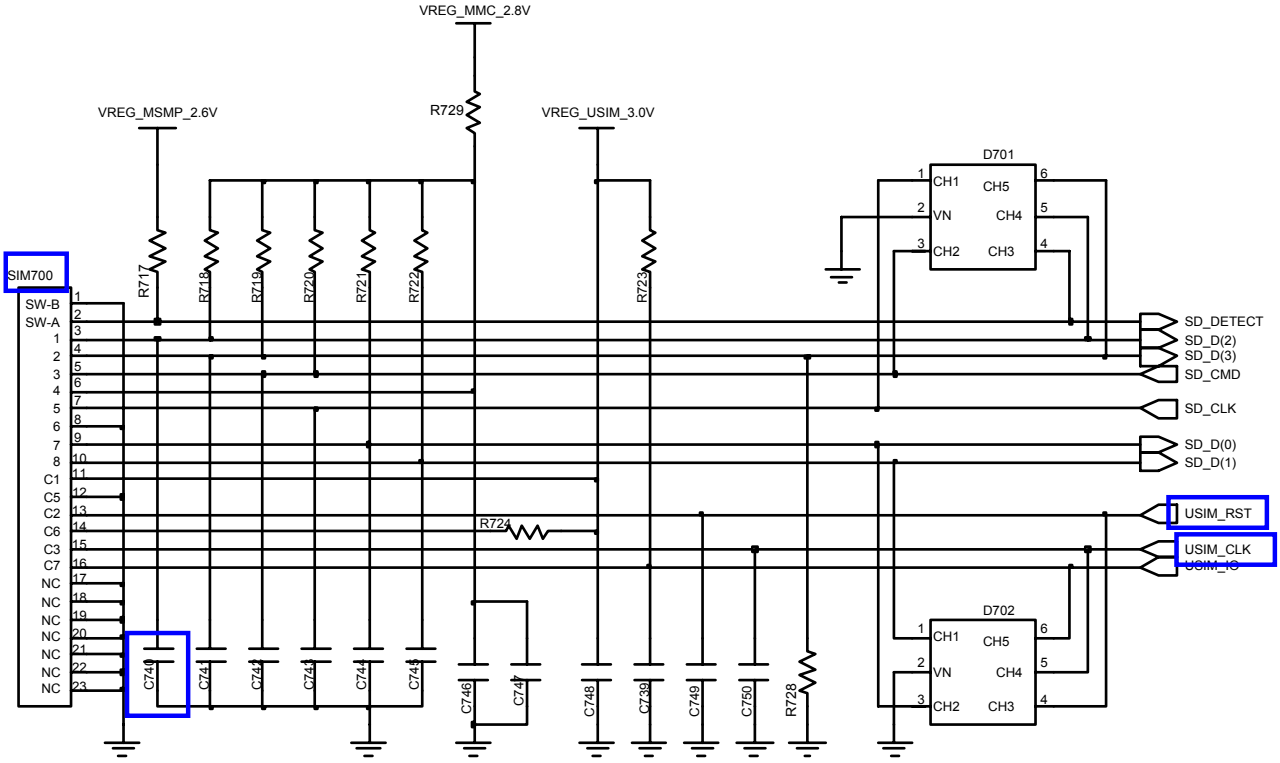

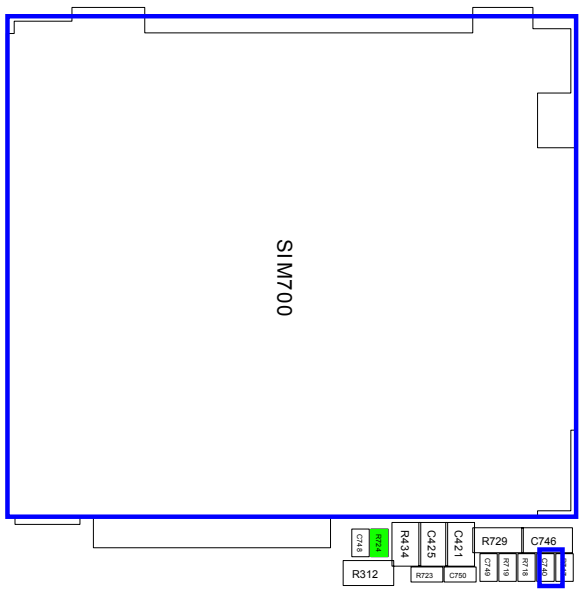

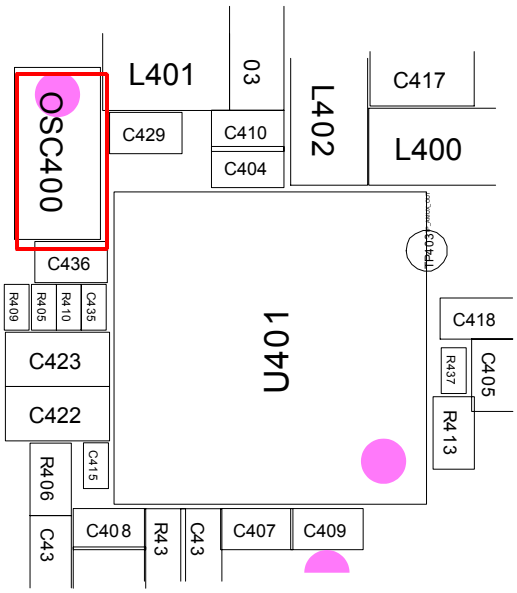

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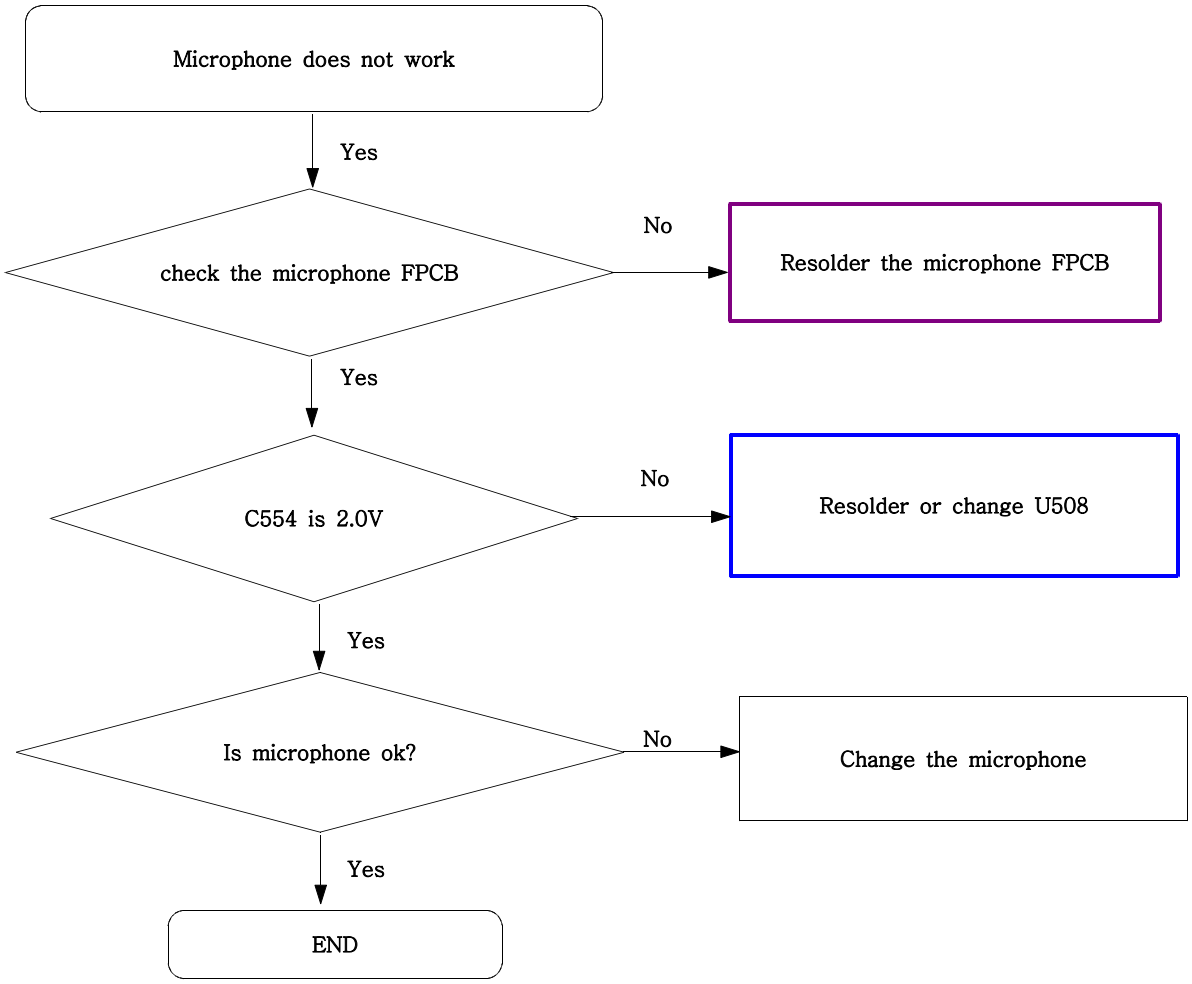
9-5. Microphone Part



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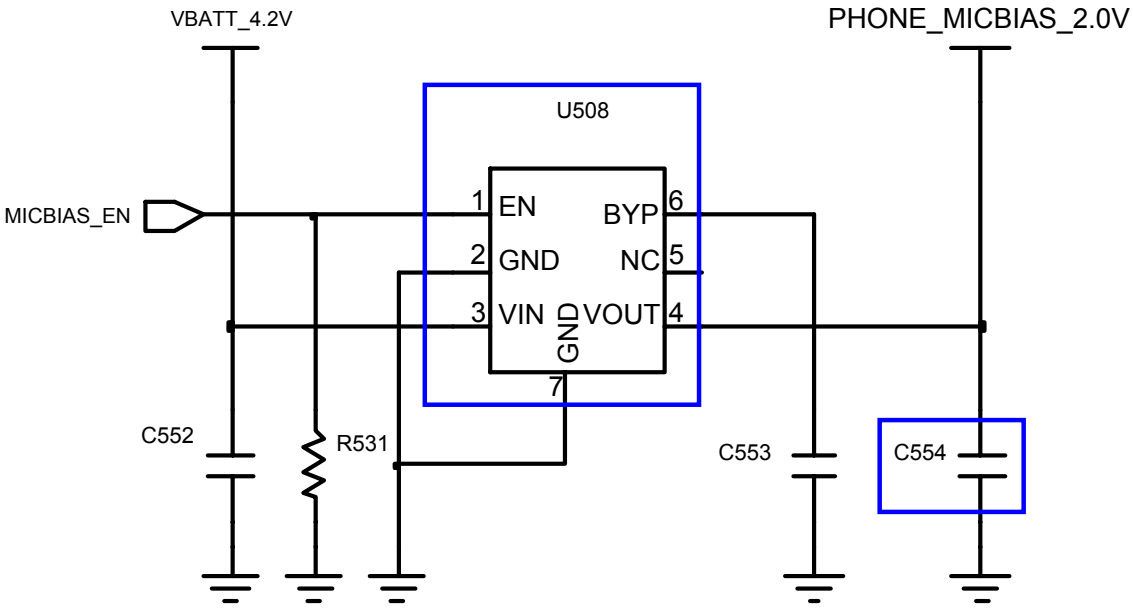

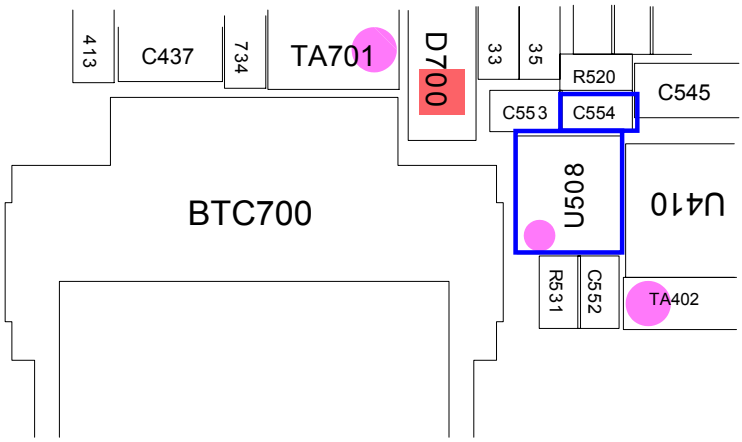

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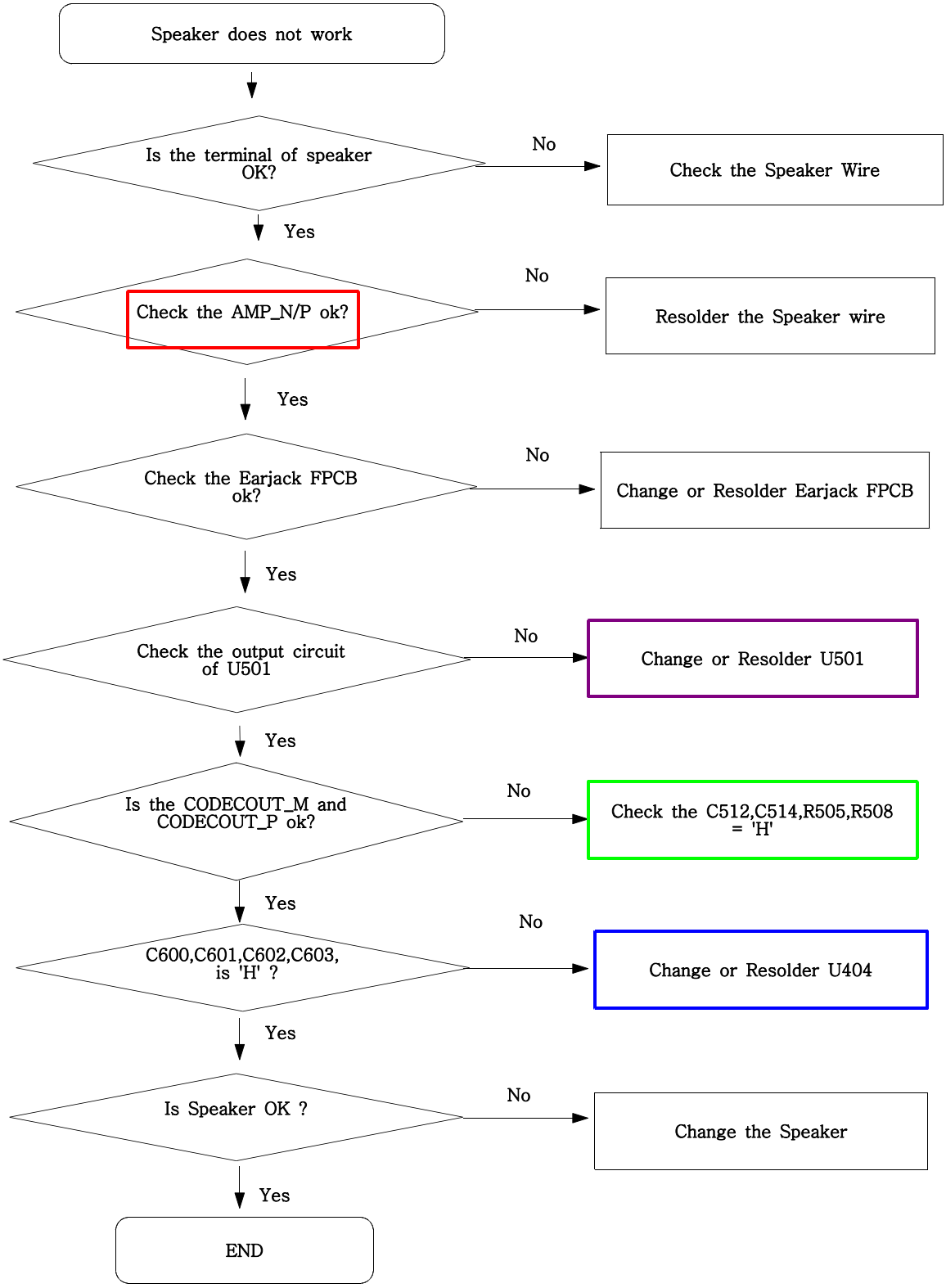
9-6. Speaker Part(Melody)



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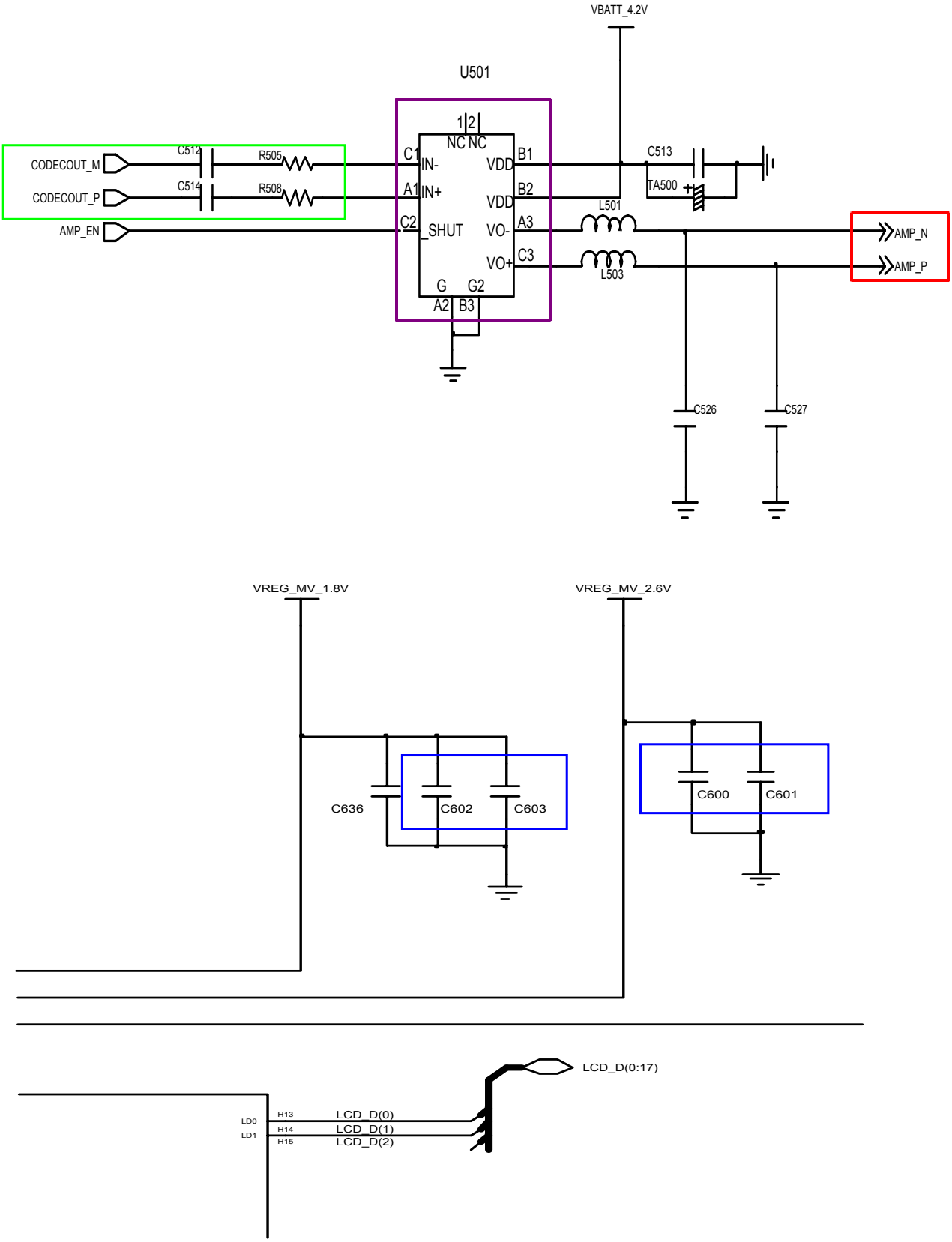

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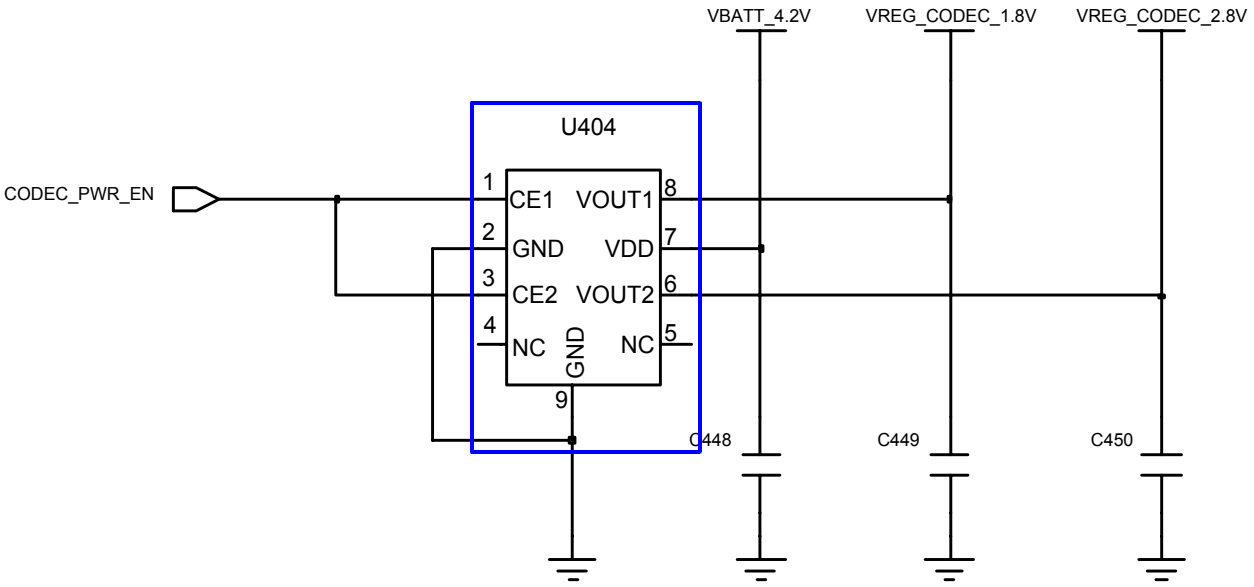

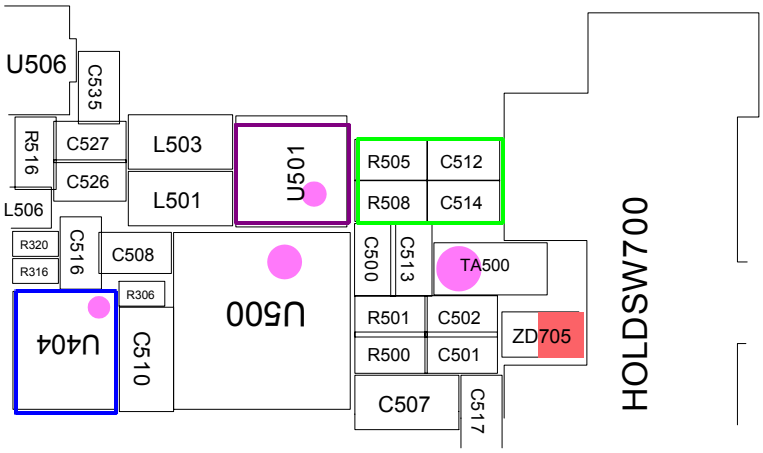

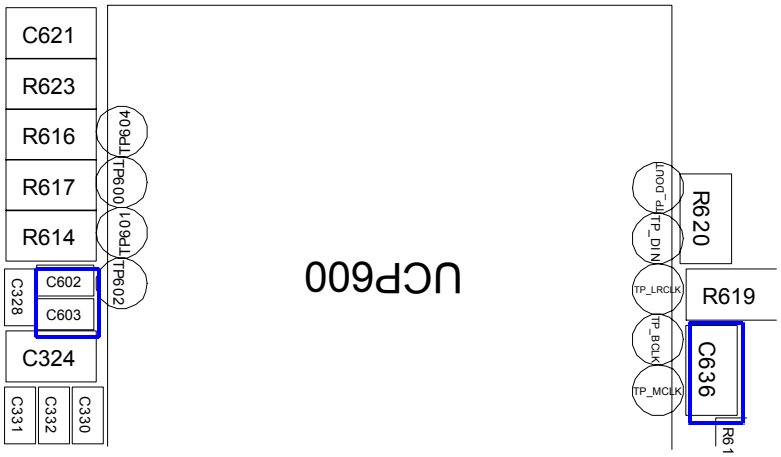

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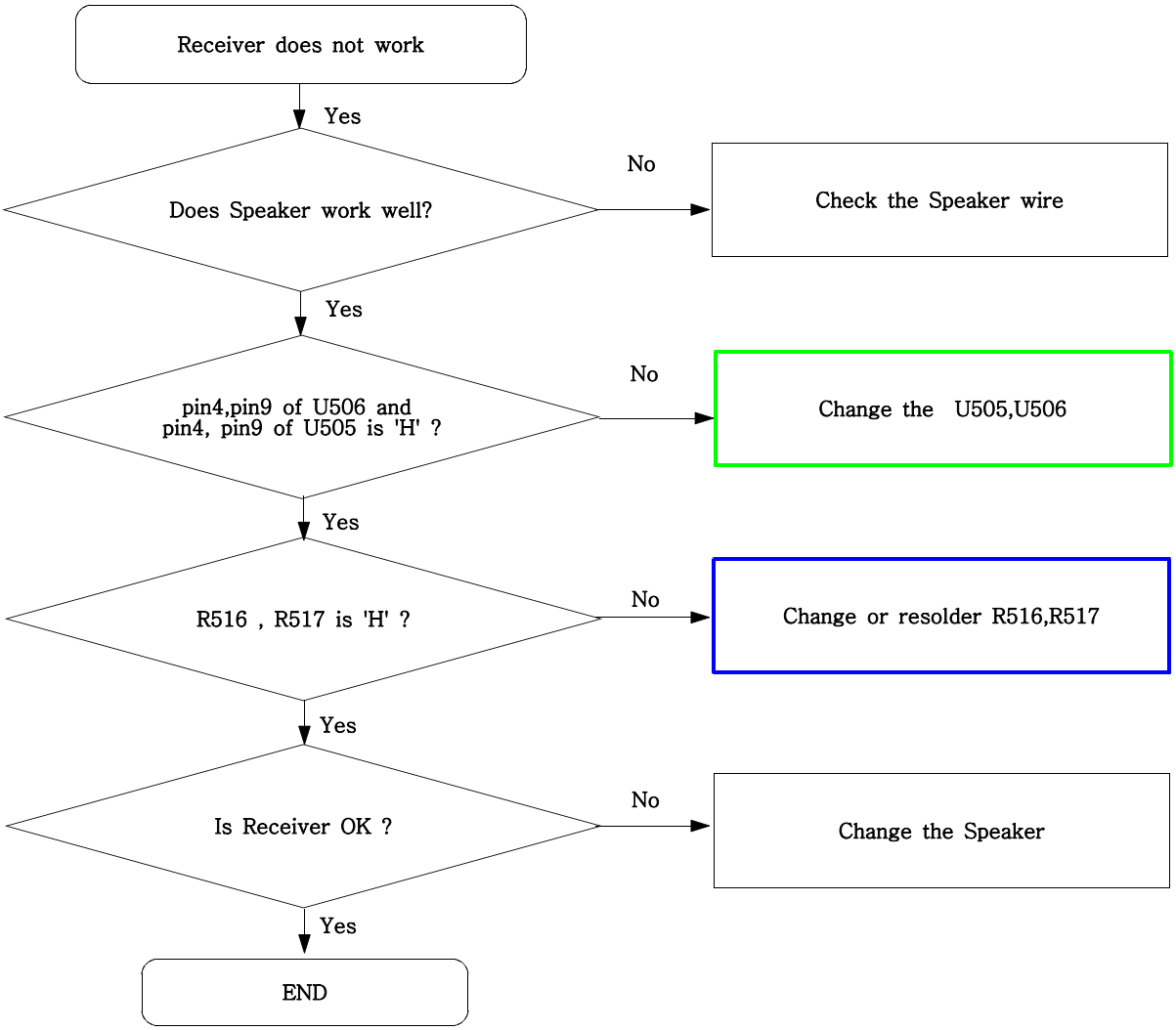
9-7. Receiver Part



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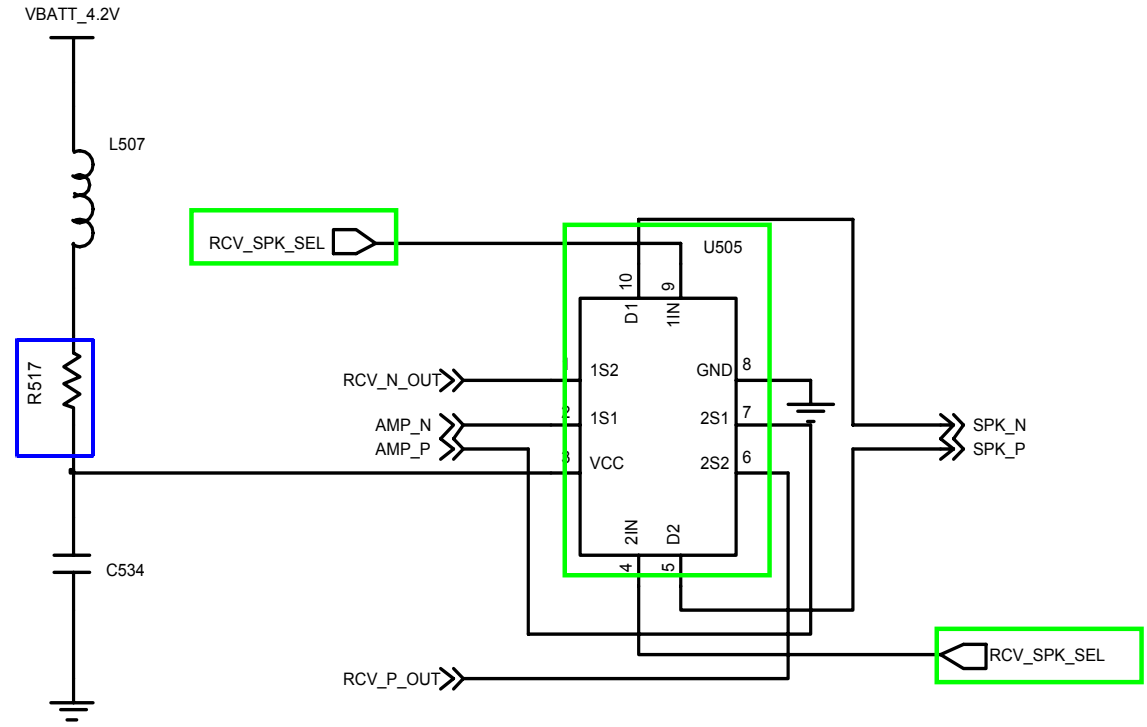

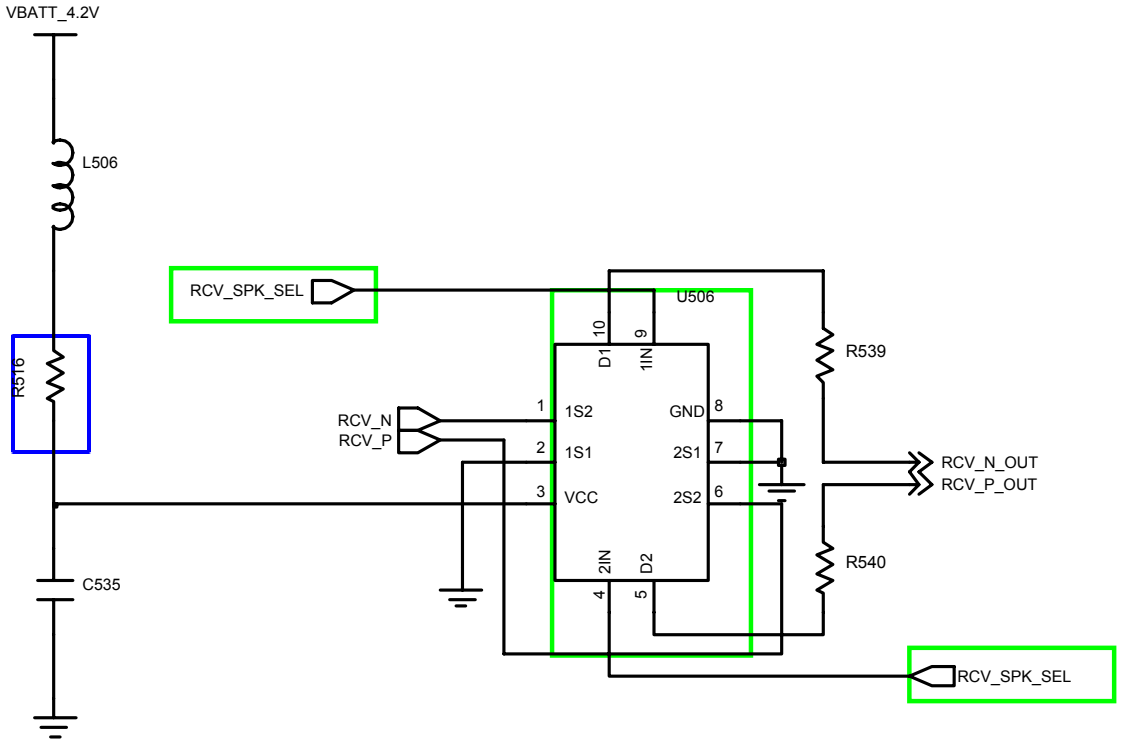

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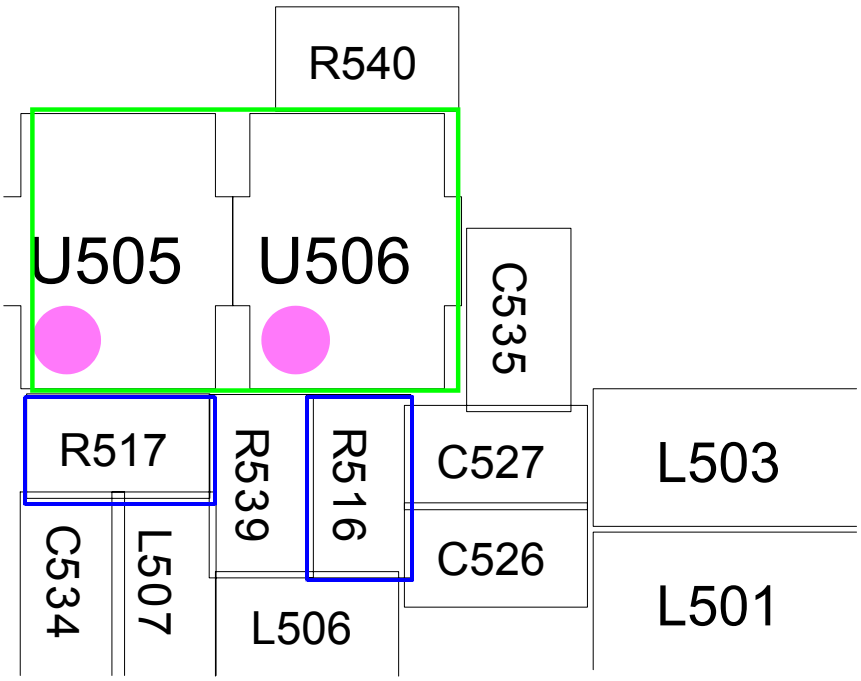

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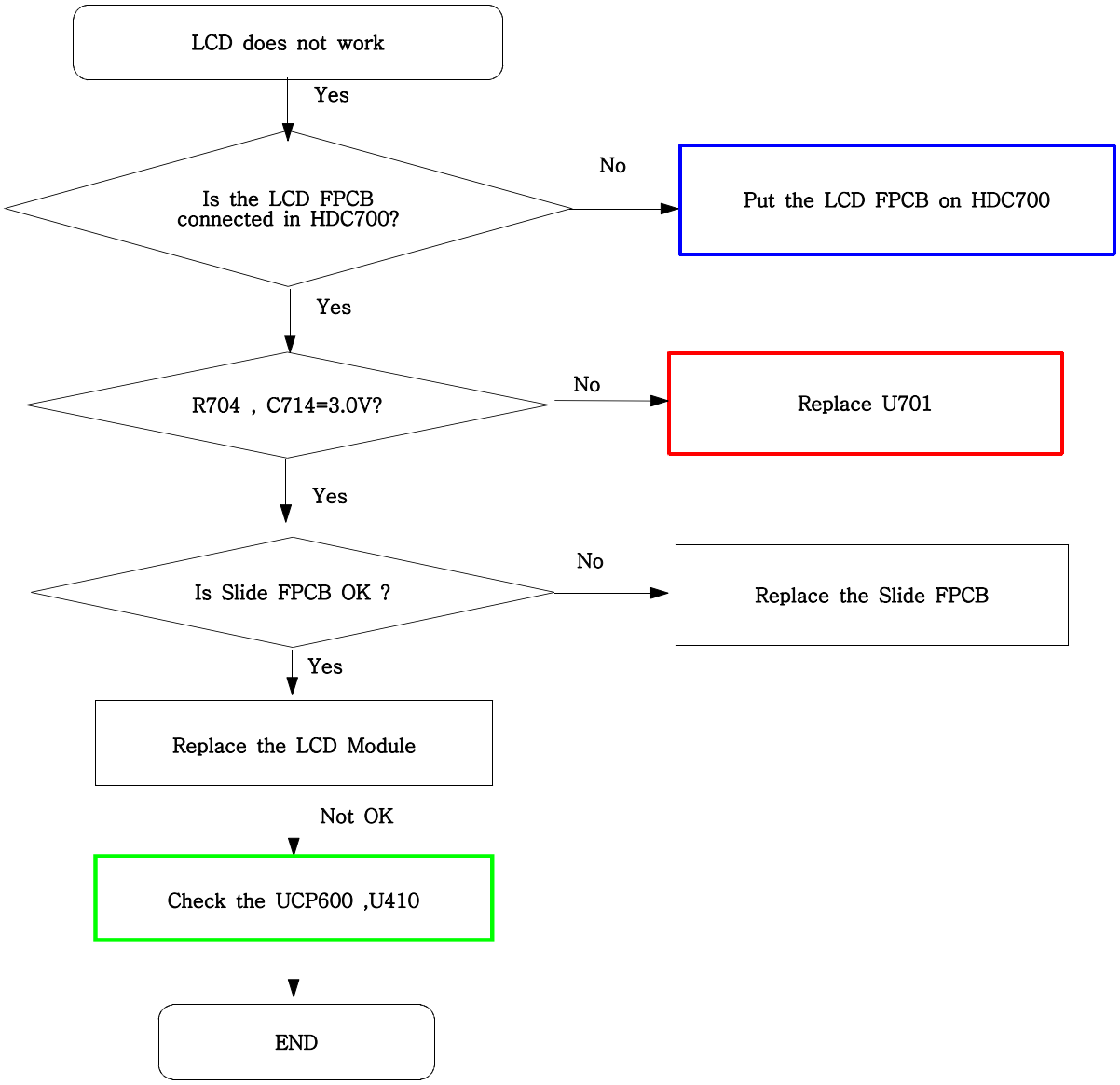
9-8. LCD part



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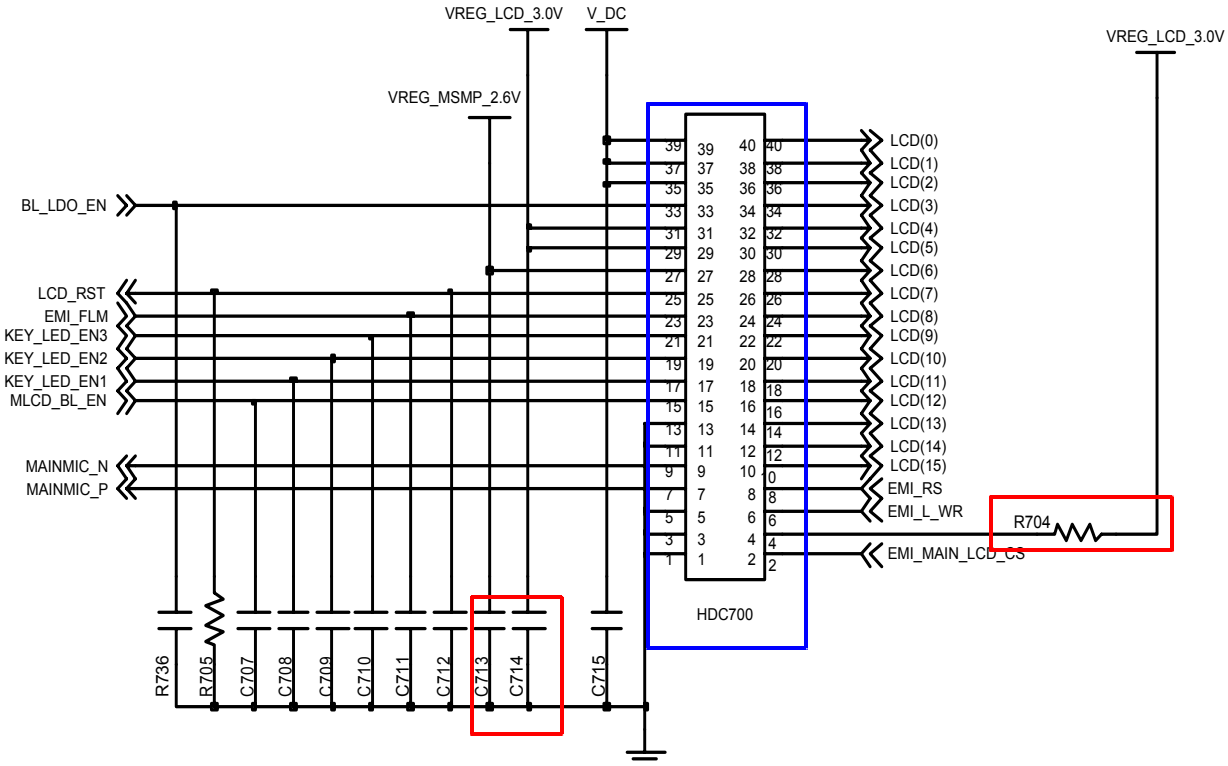

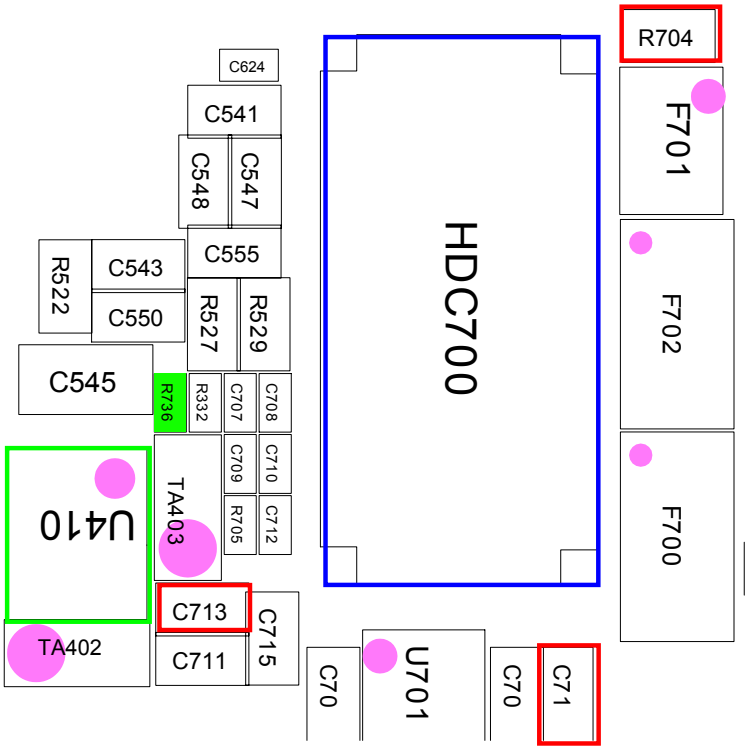

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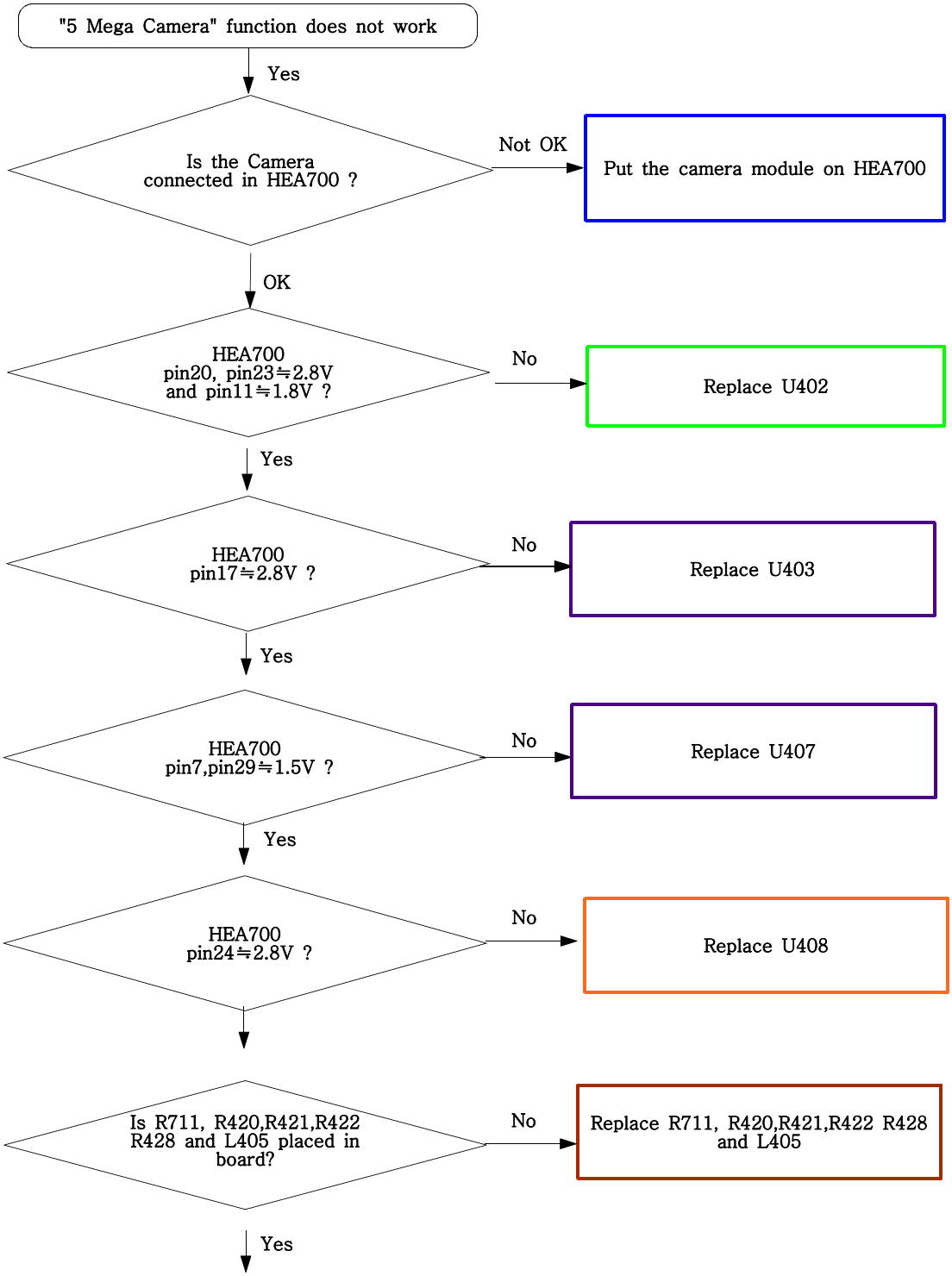
9-9. Camera part (5 Mega)



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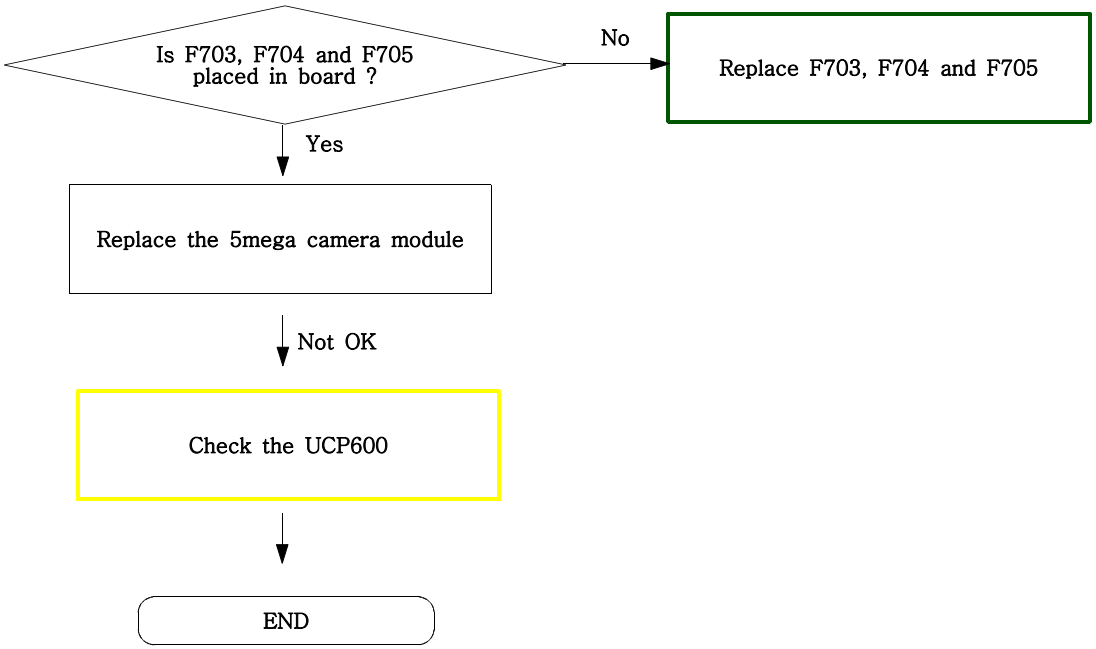

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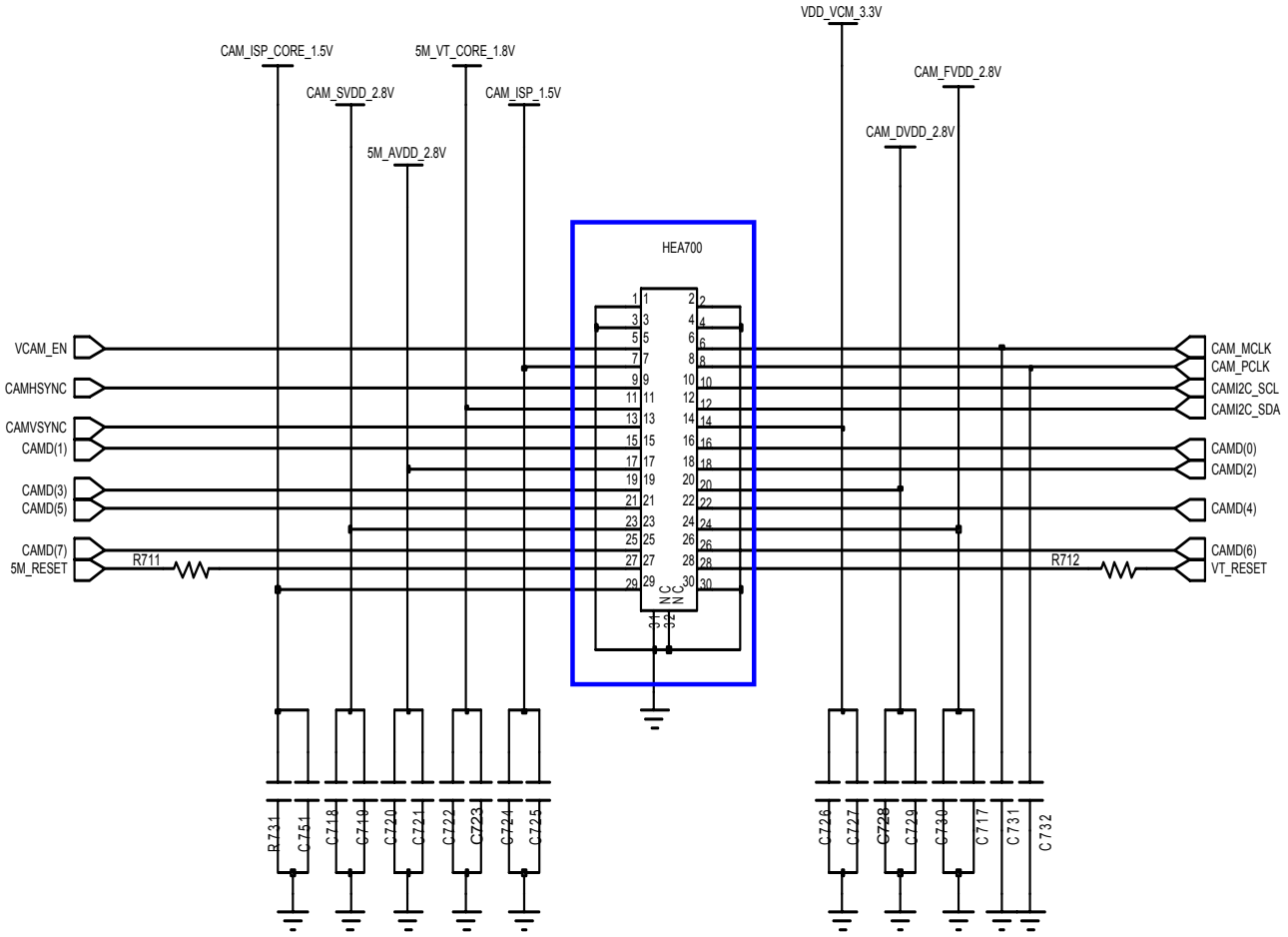

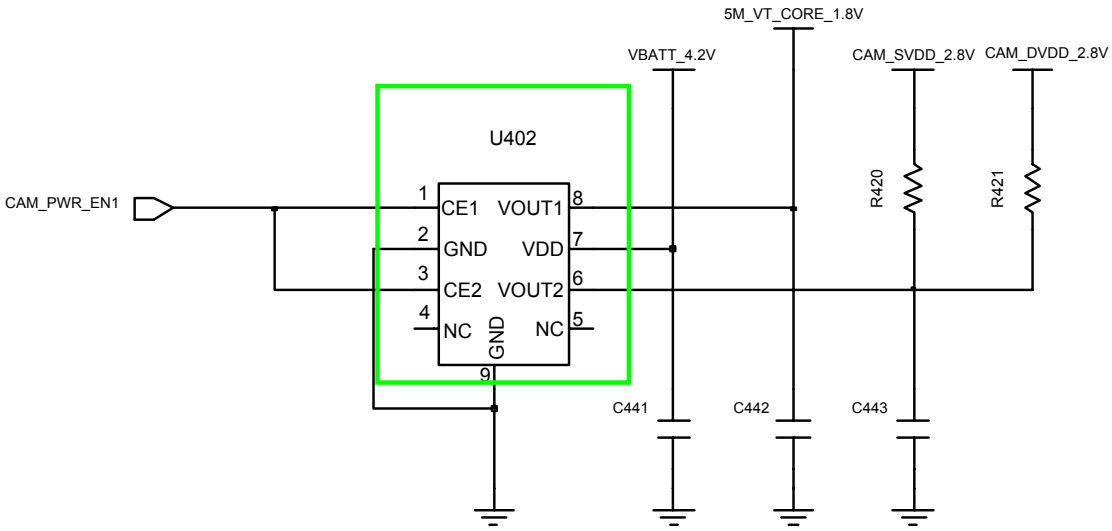

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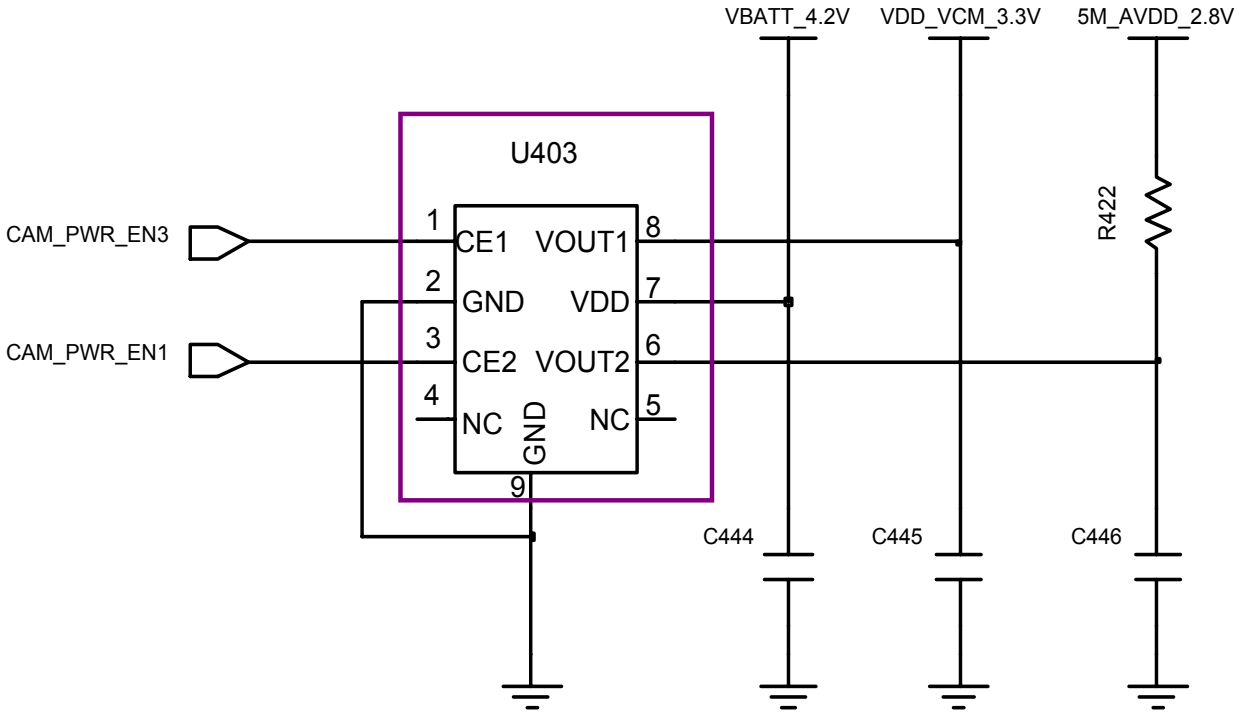

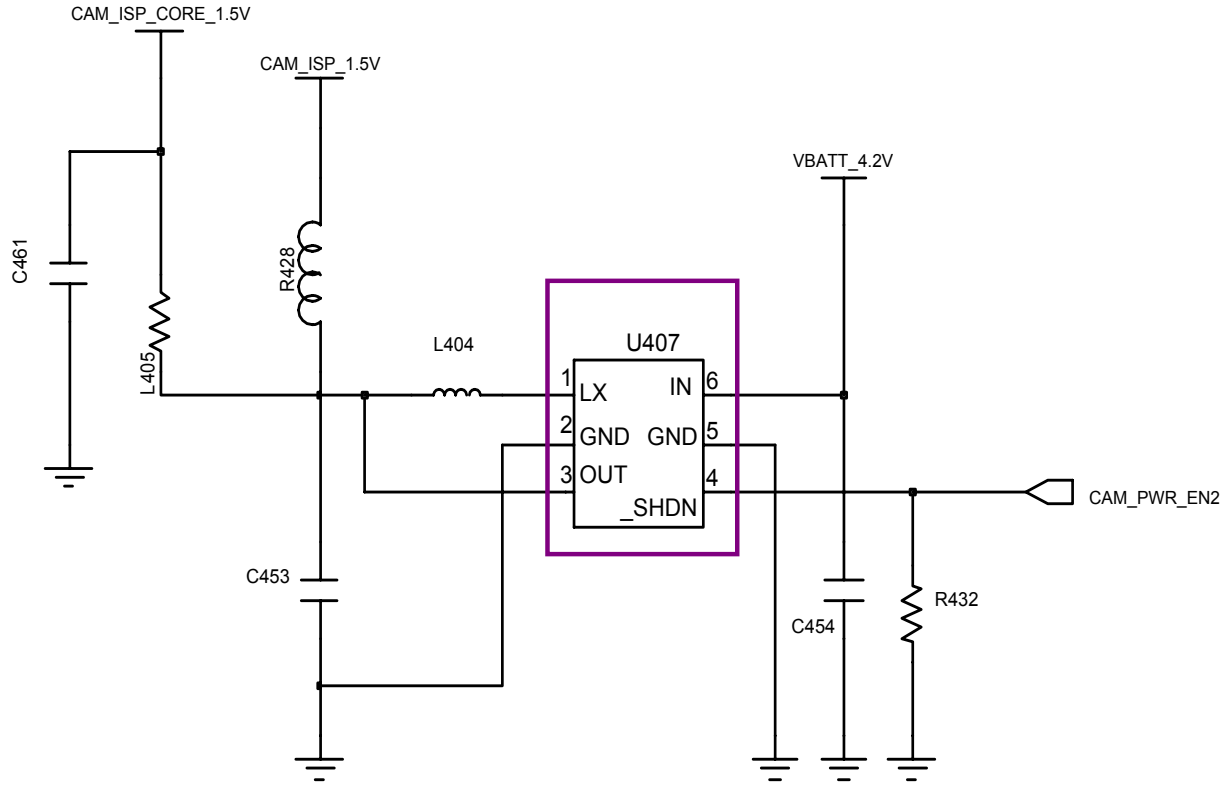

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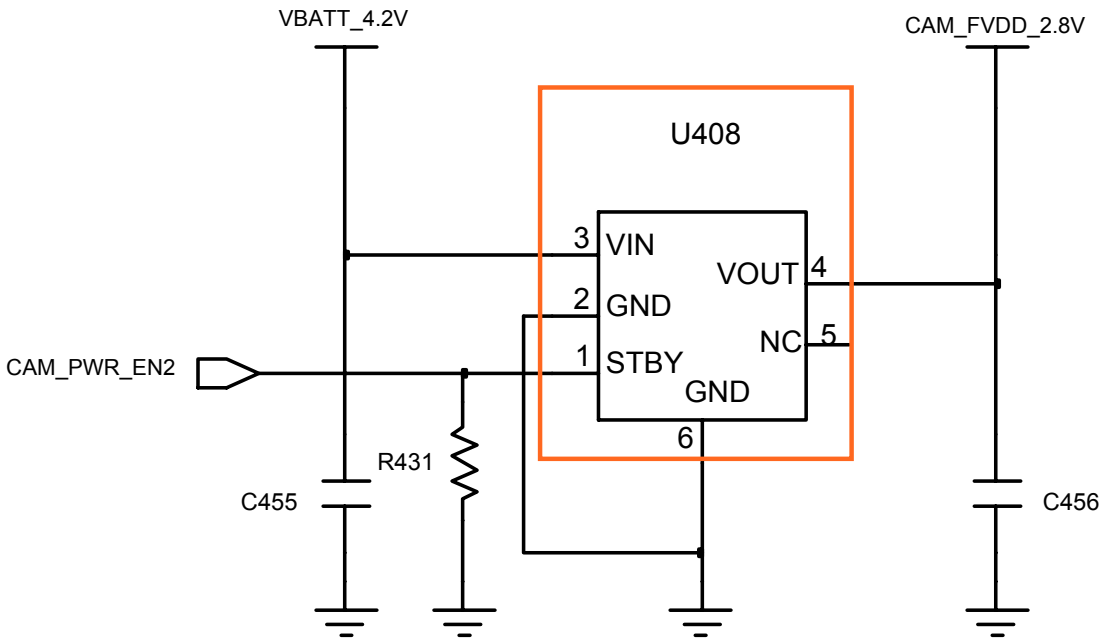

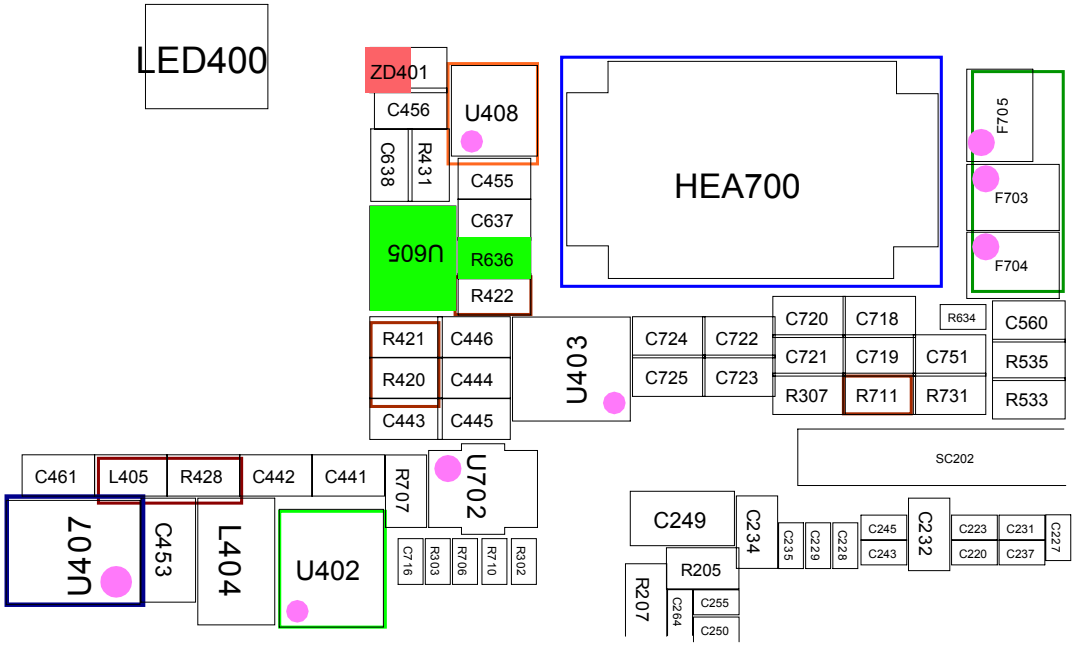

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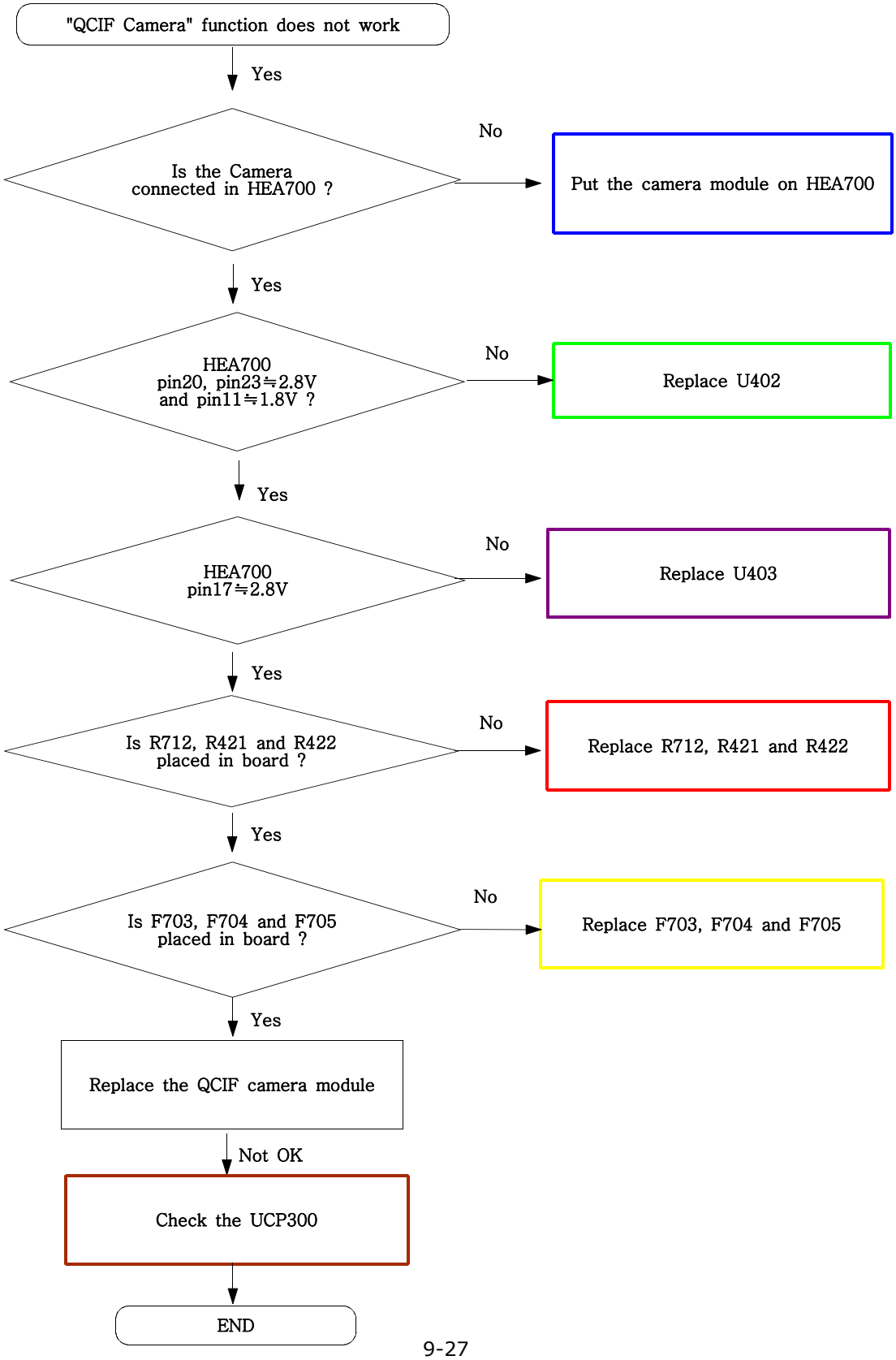
9-10. Camera part (QCIF)



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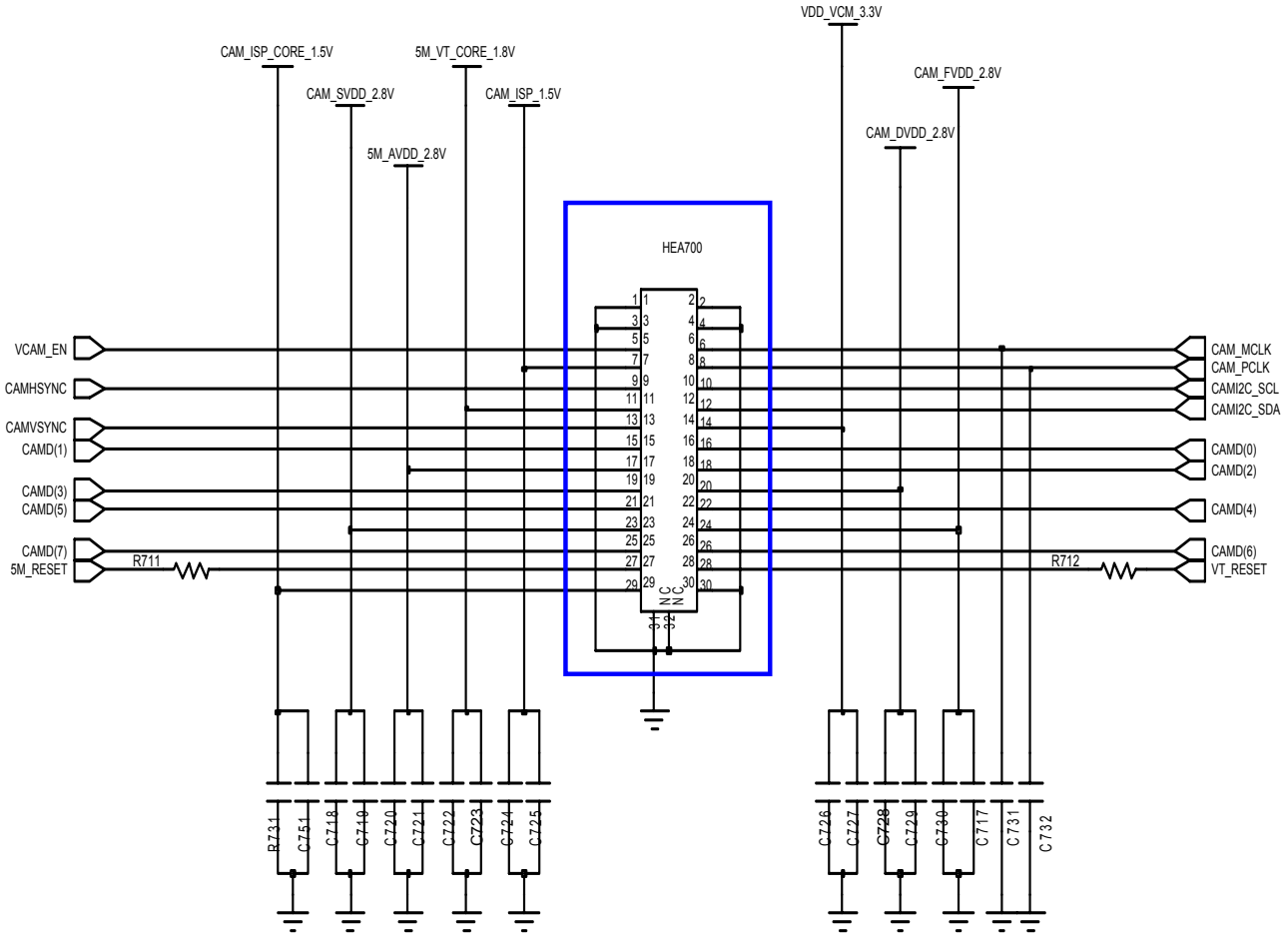

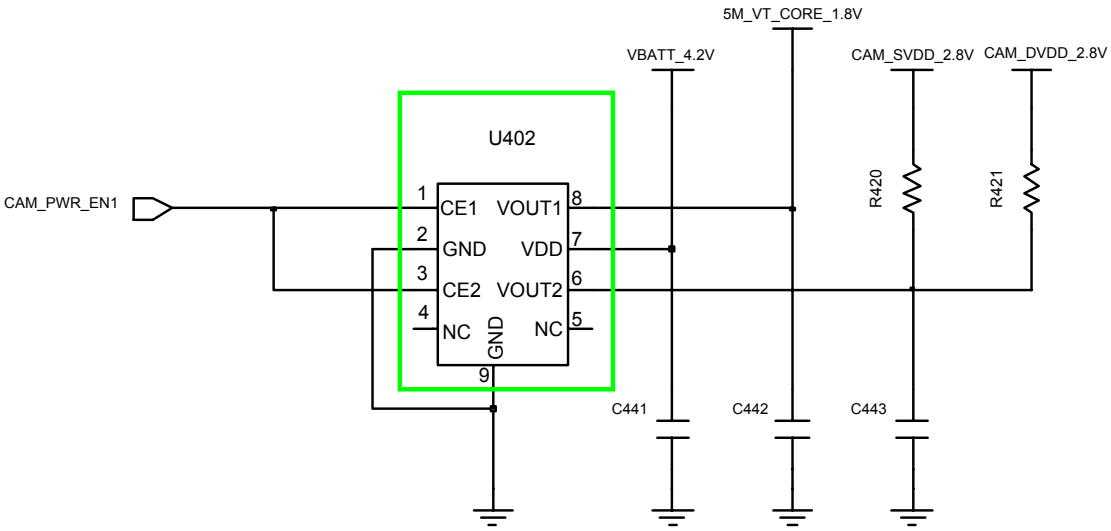

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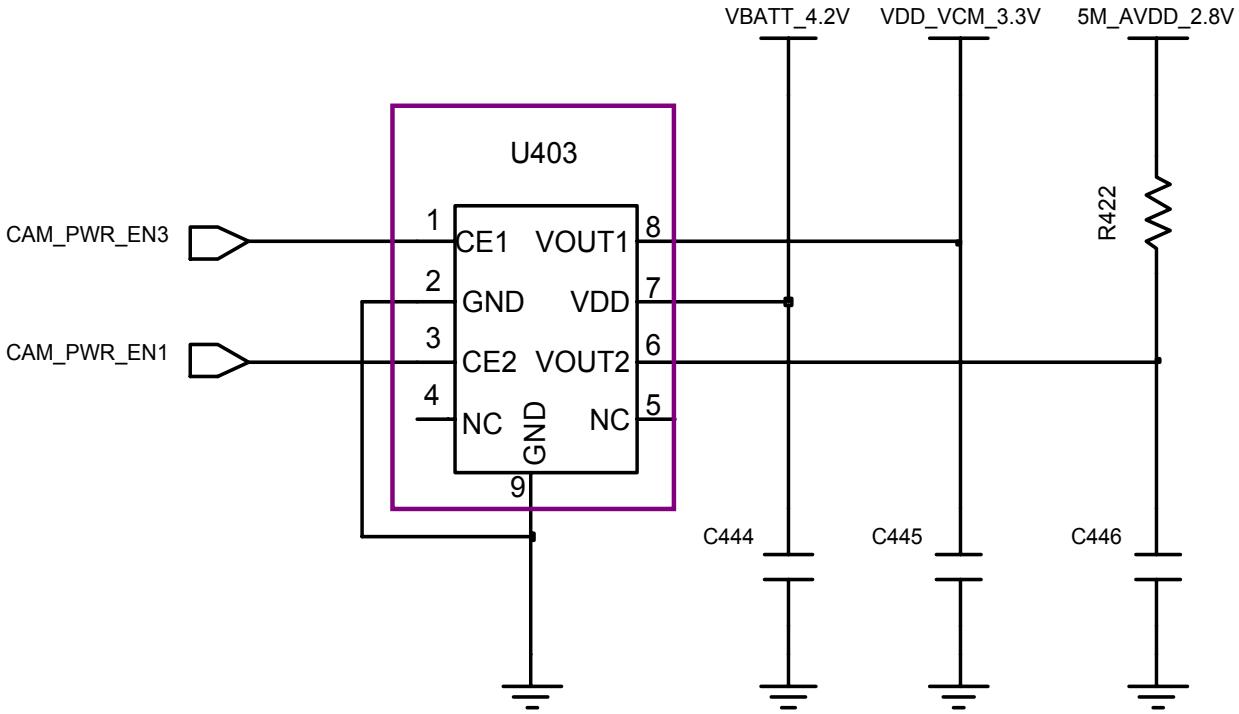

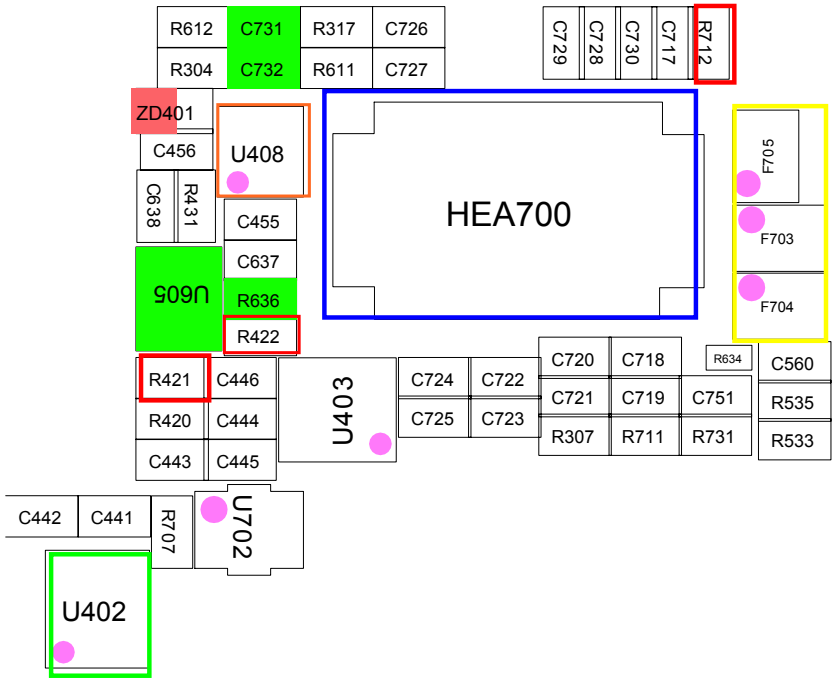

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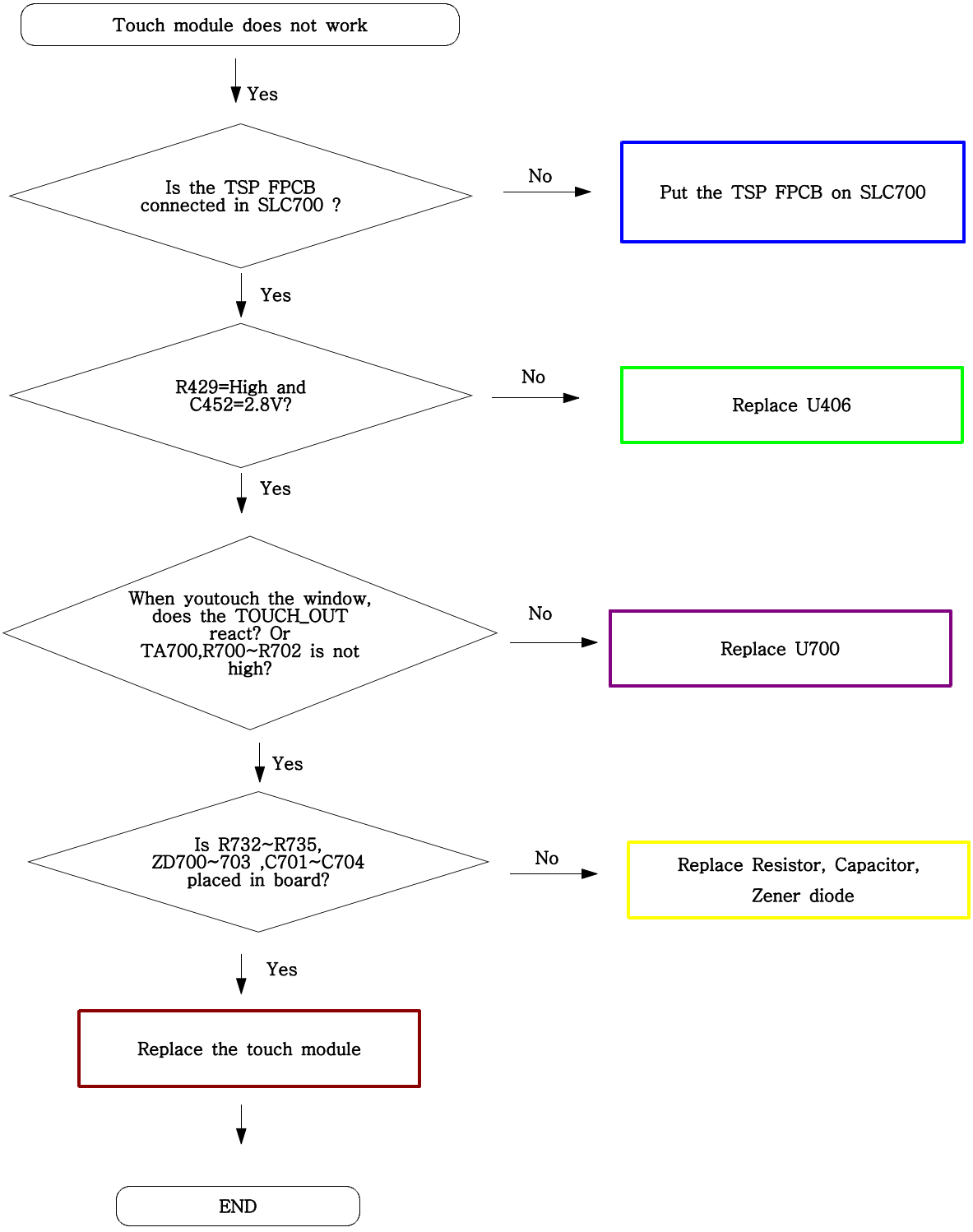
9-11. Touch part



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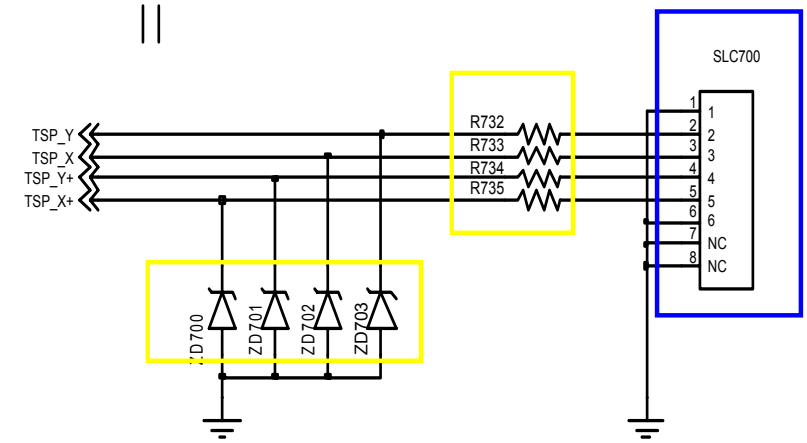

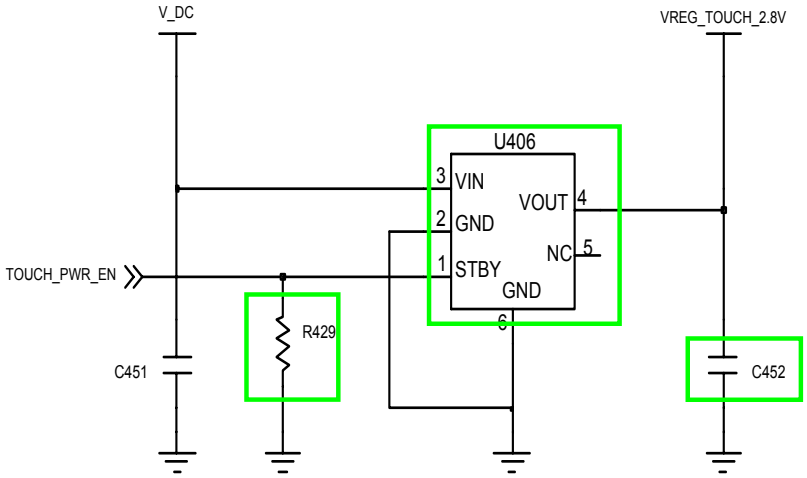

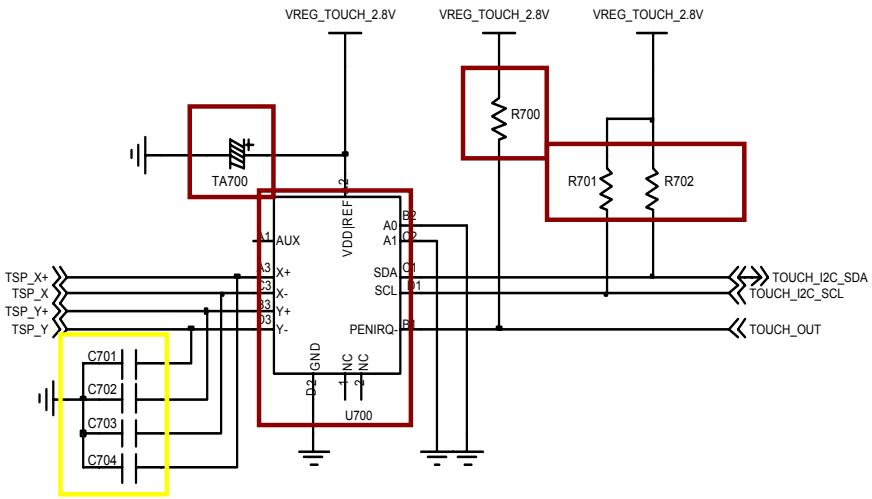

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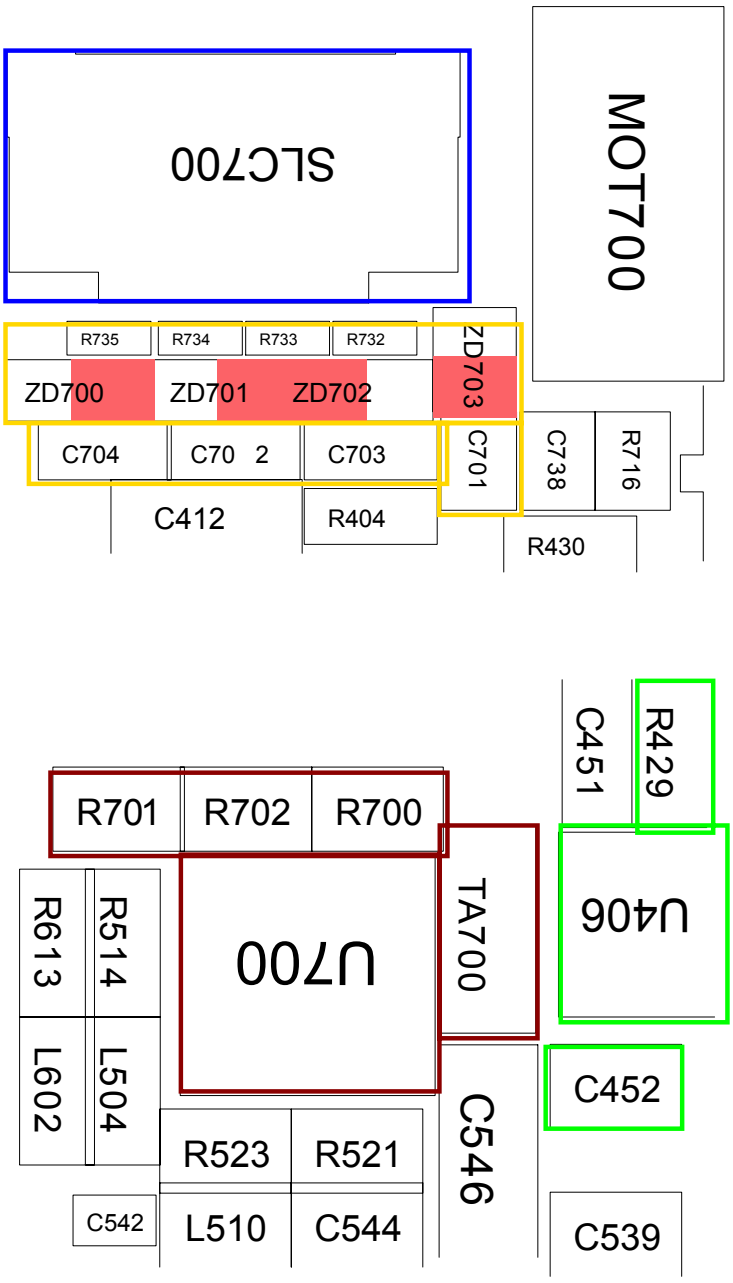

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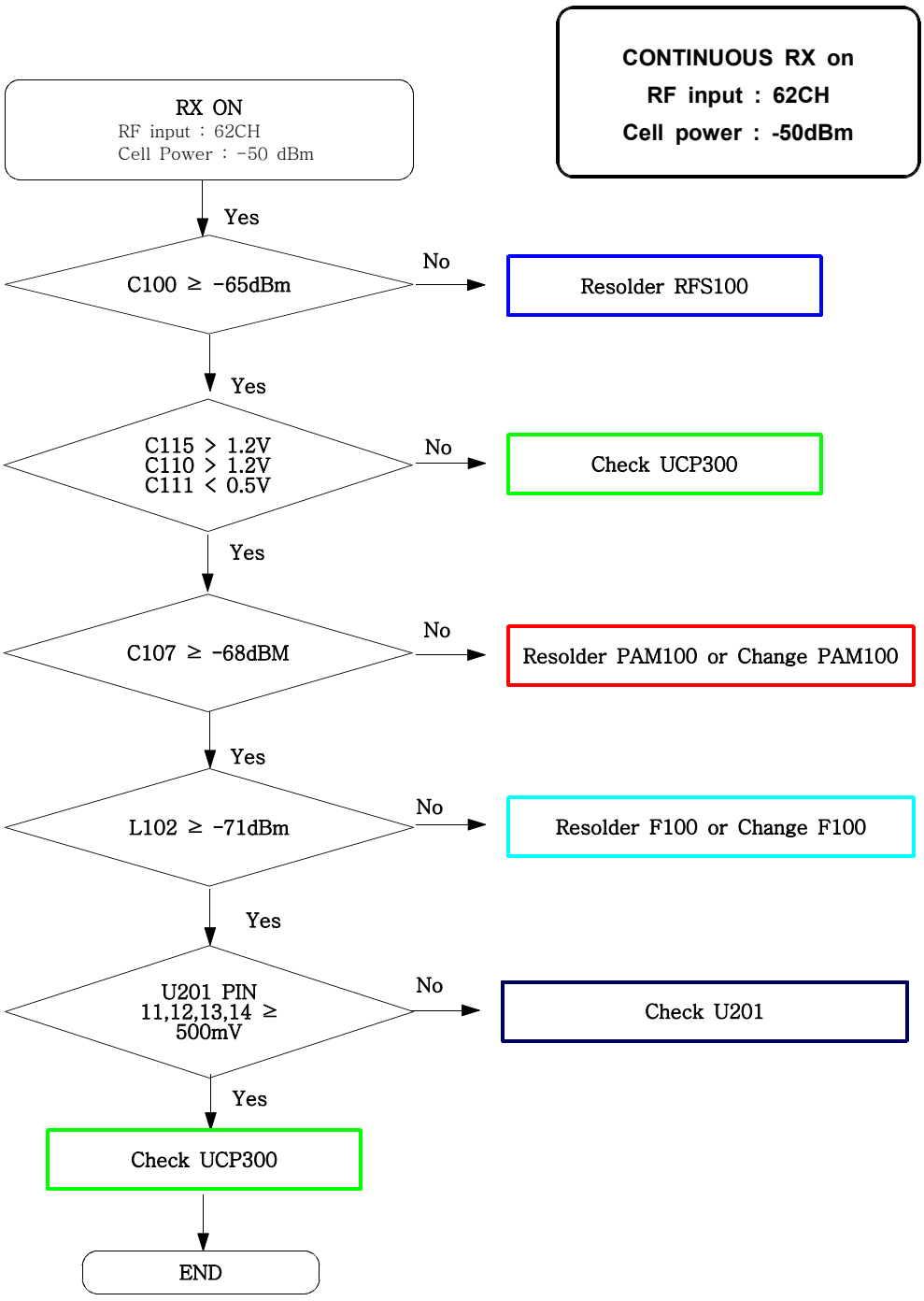
9-12. GSM Receiver



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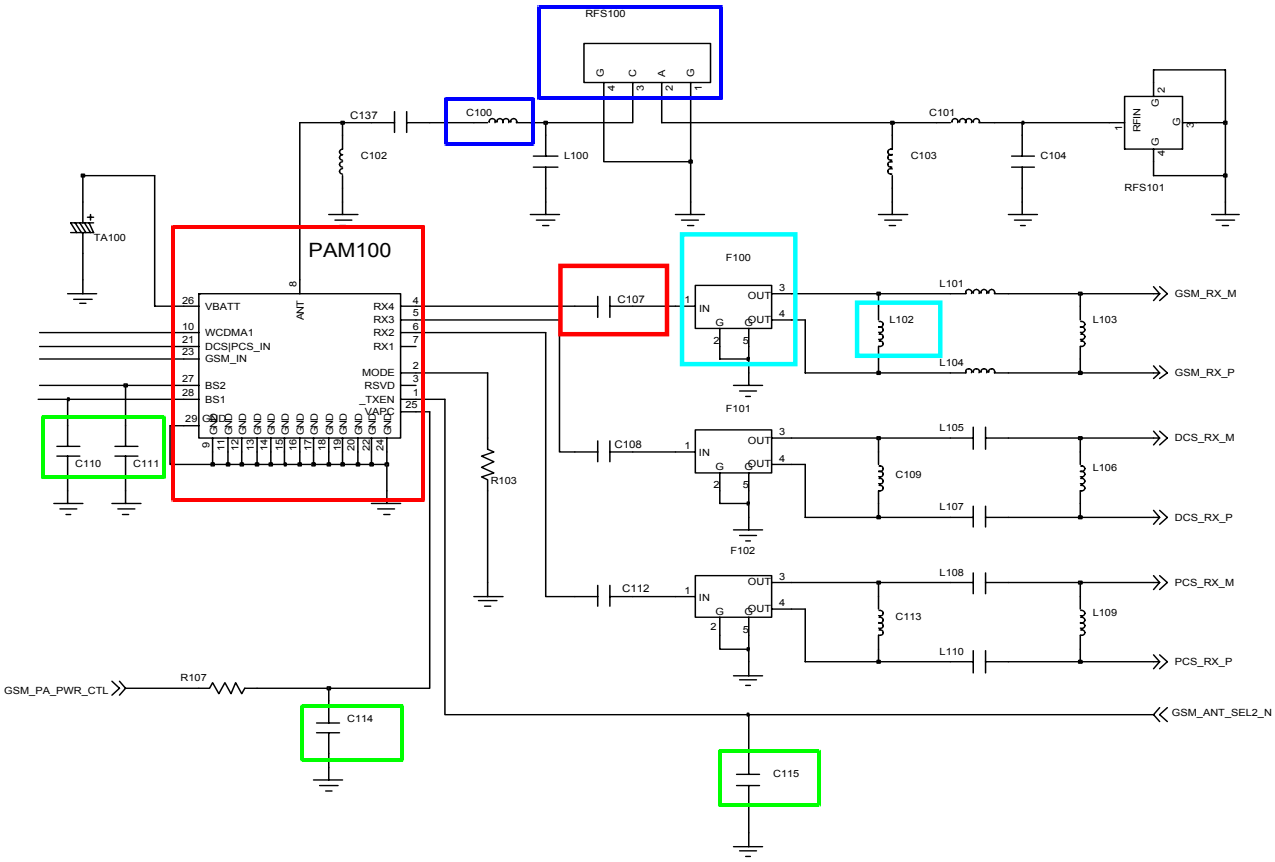

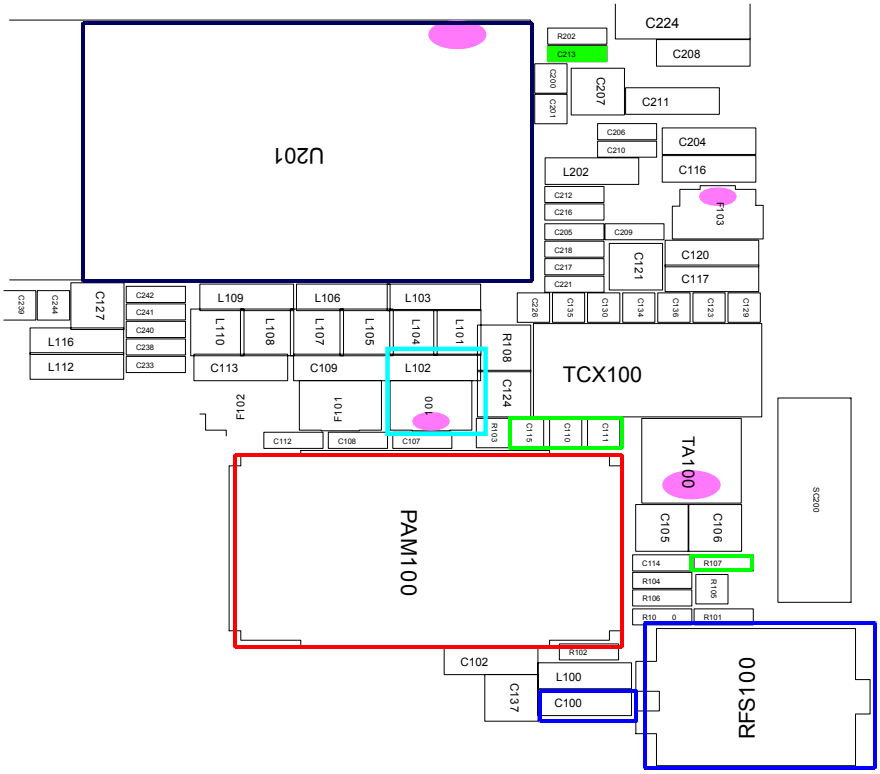

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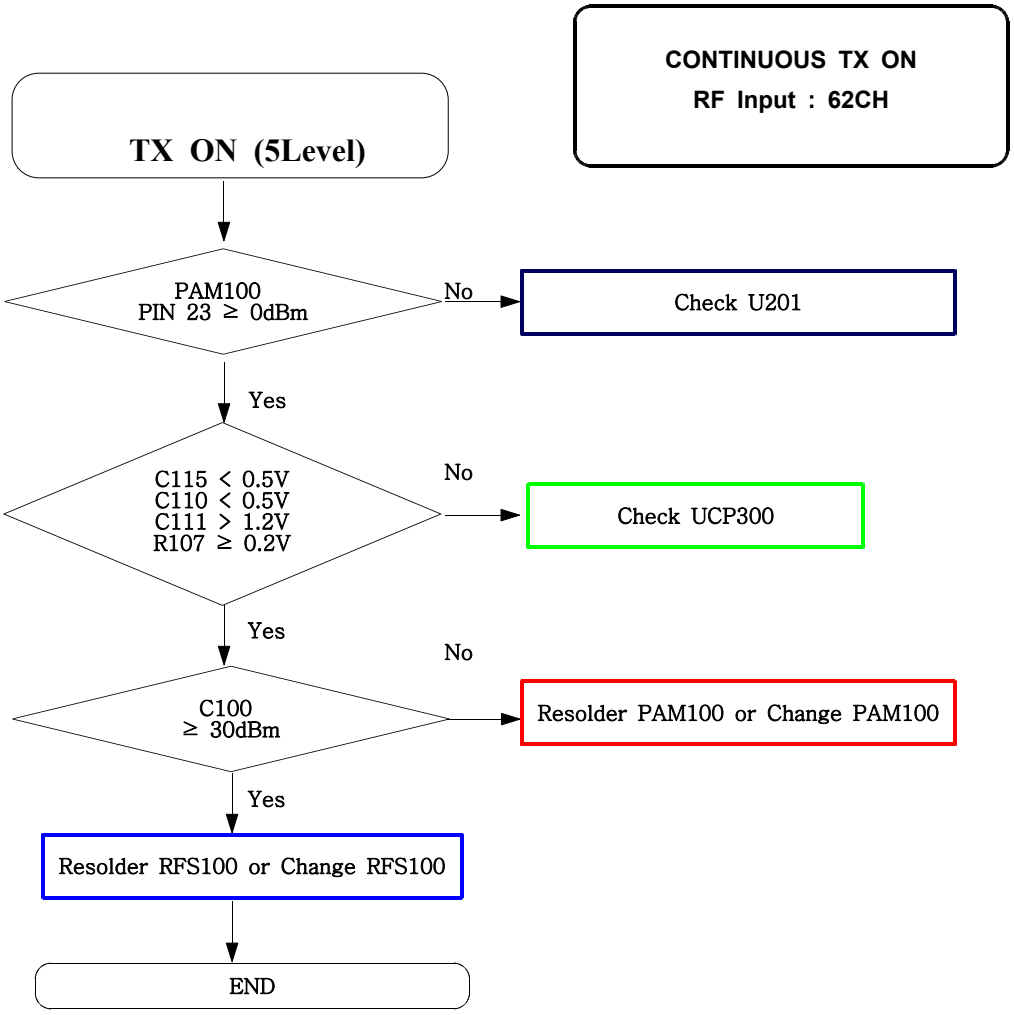
9-13 GSM Transmitter



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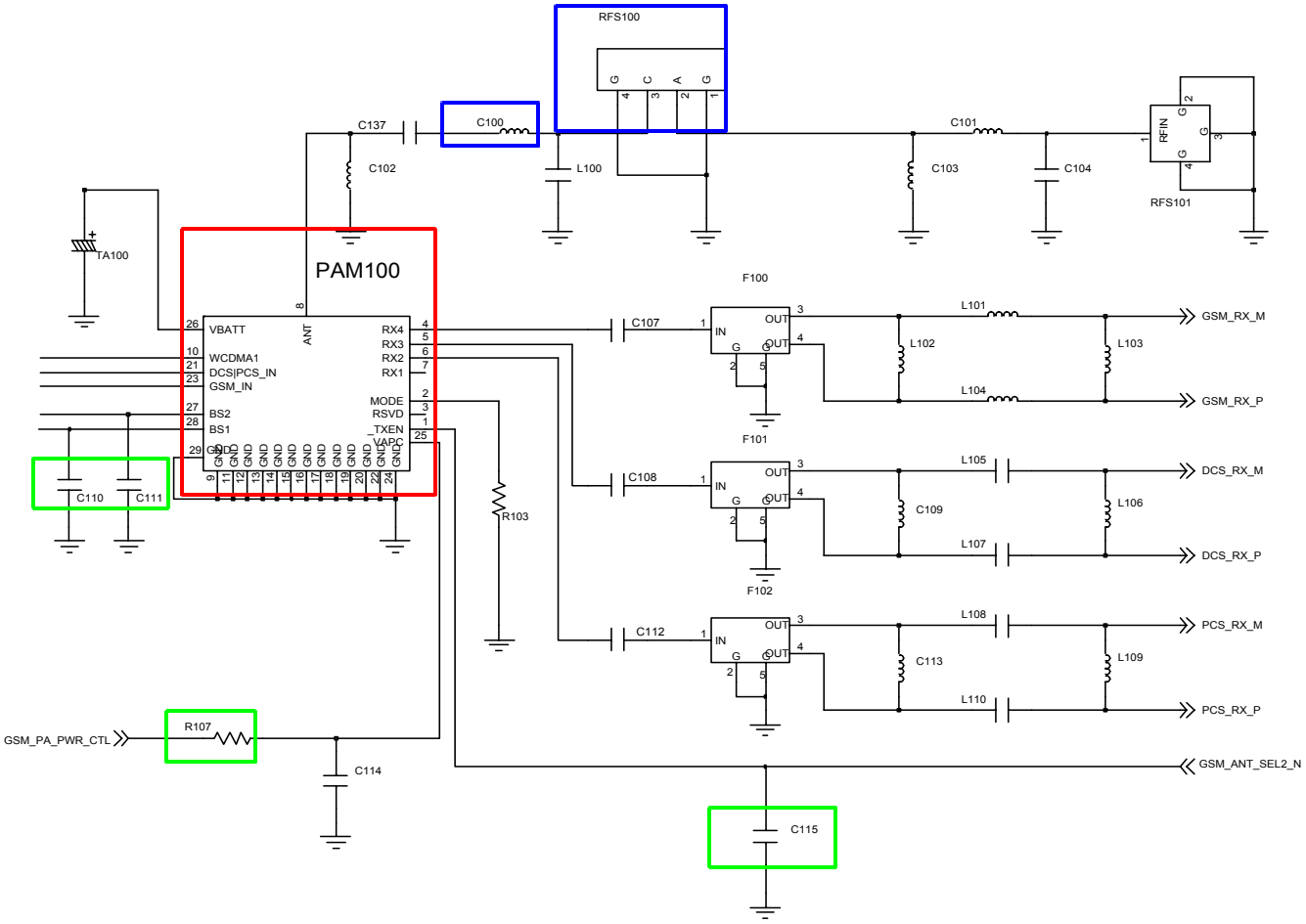

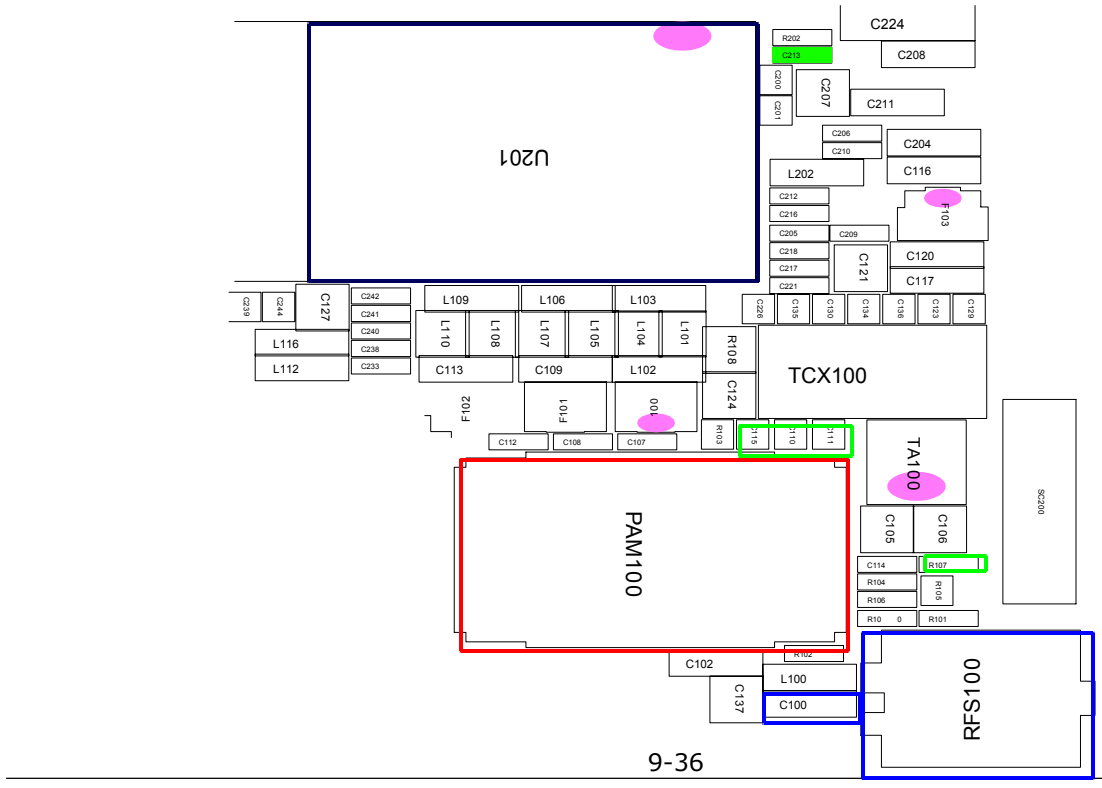

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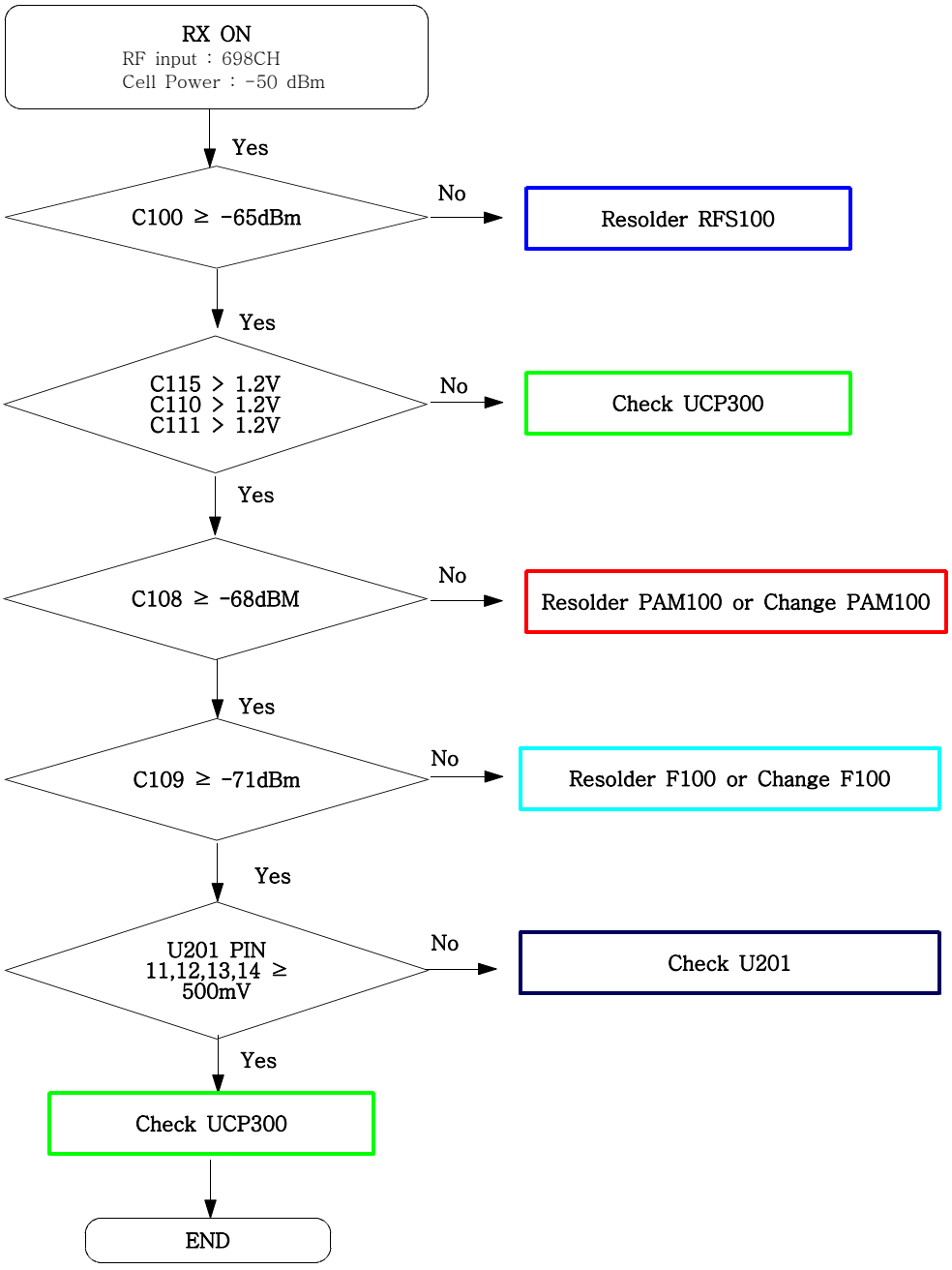
9-14. DCS Receiver



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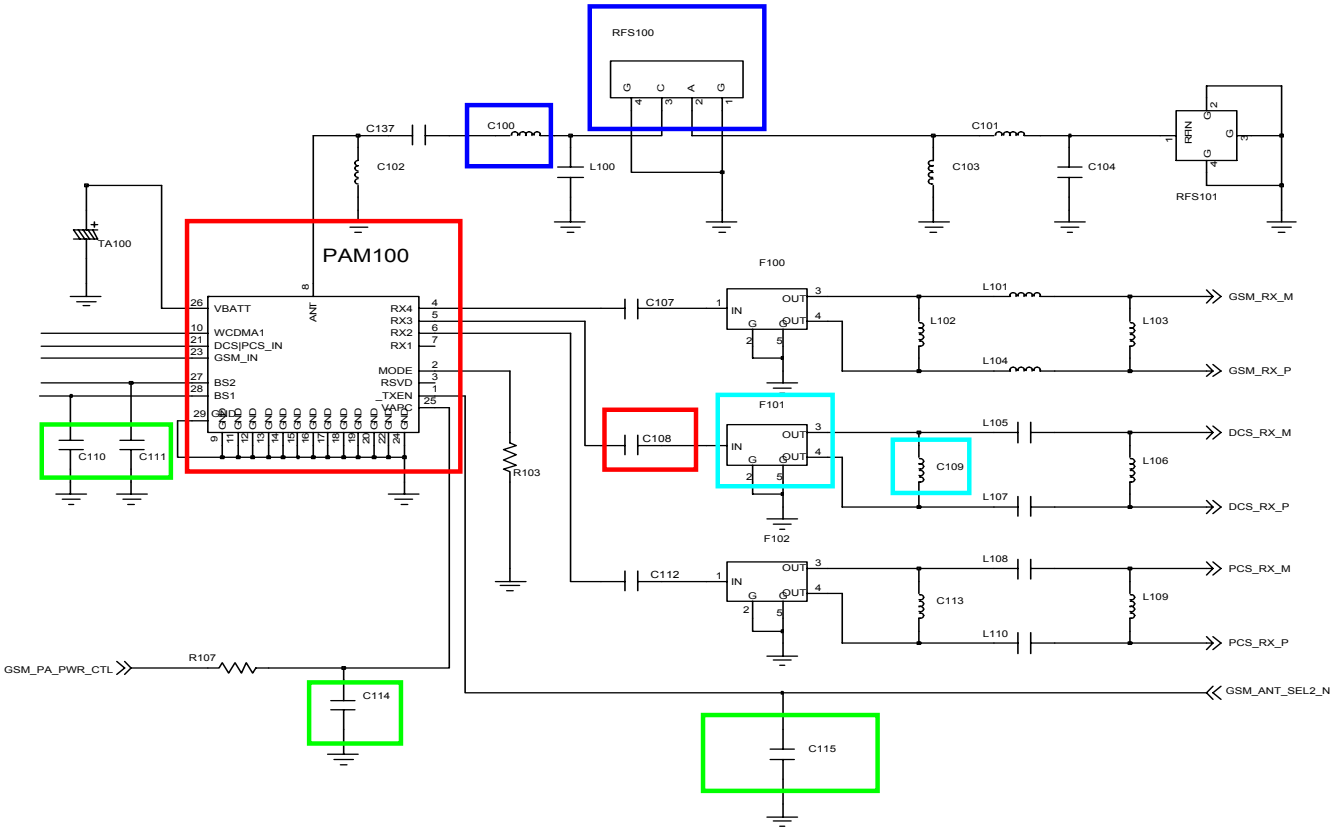

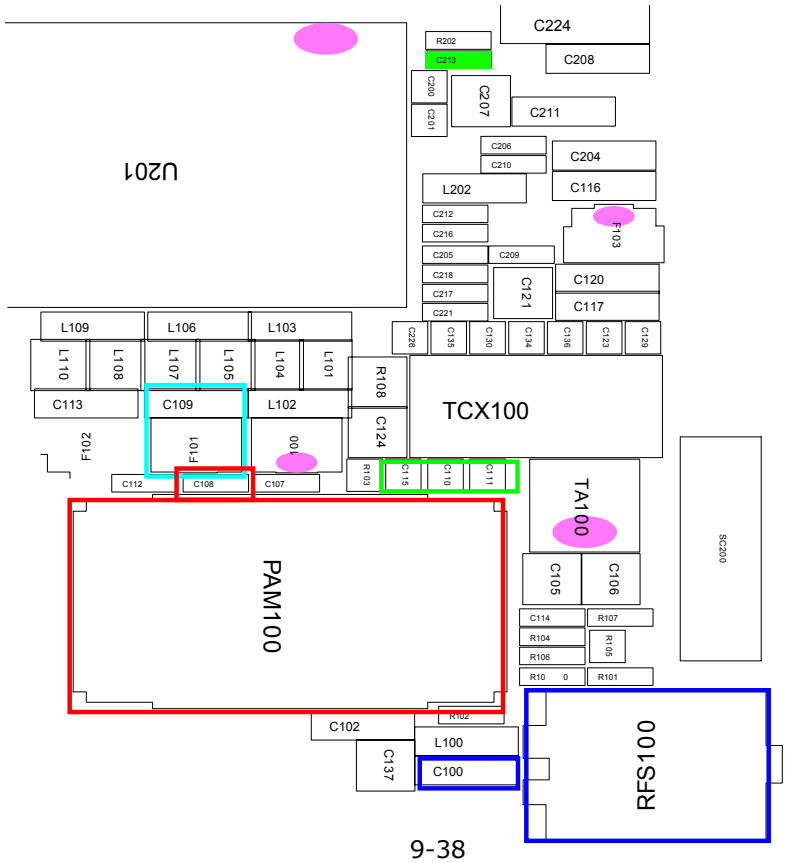

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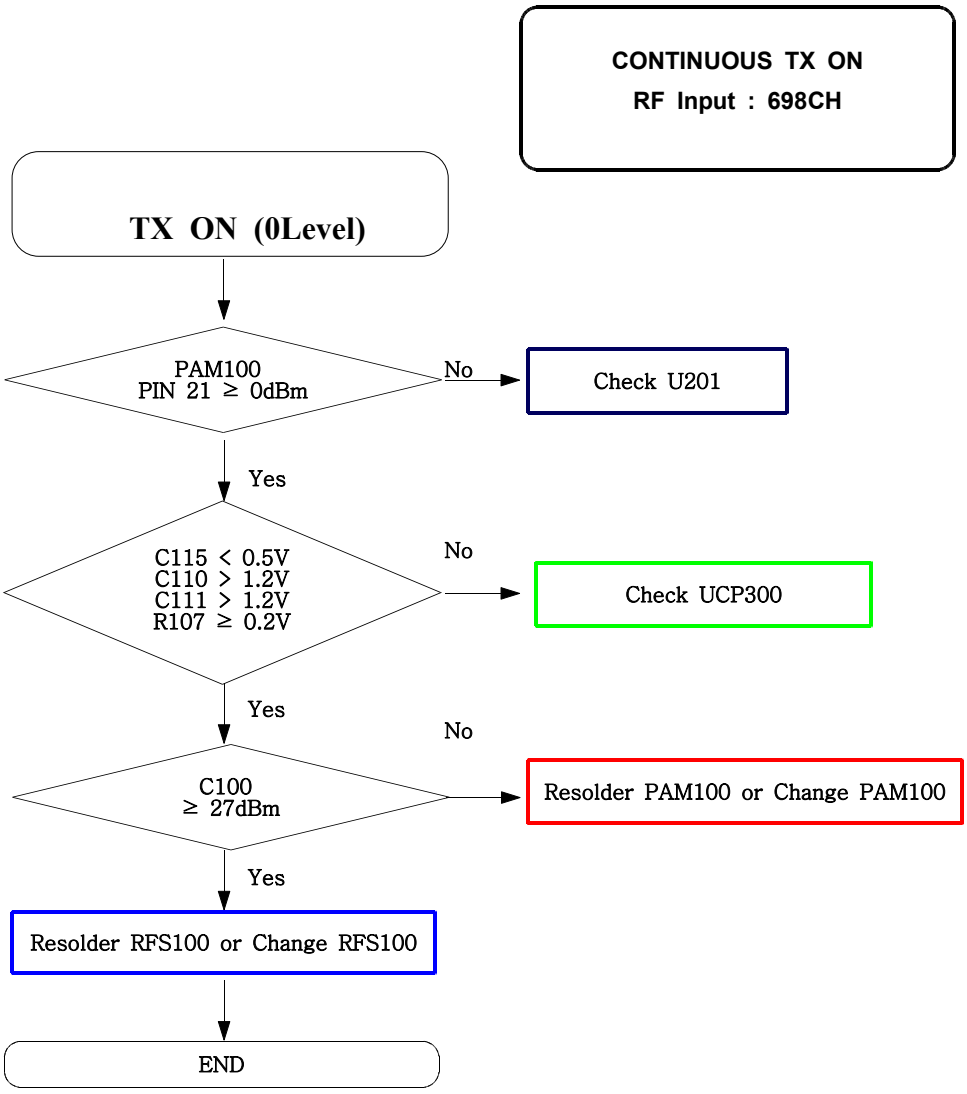
9-15. DCS Transmitter



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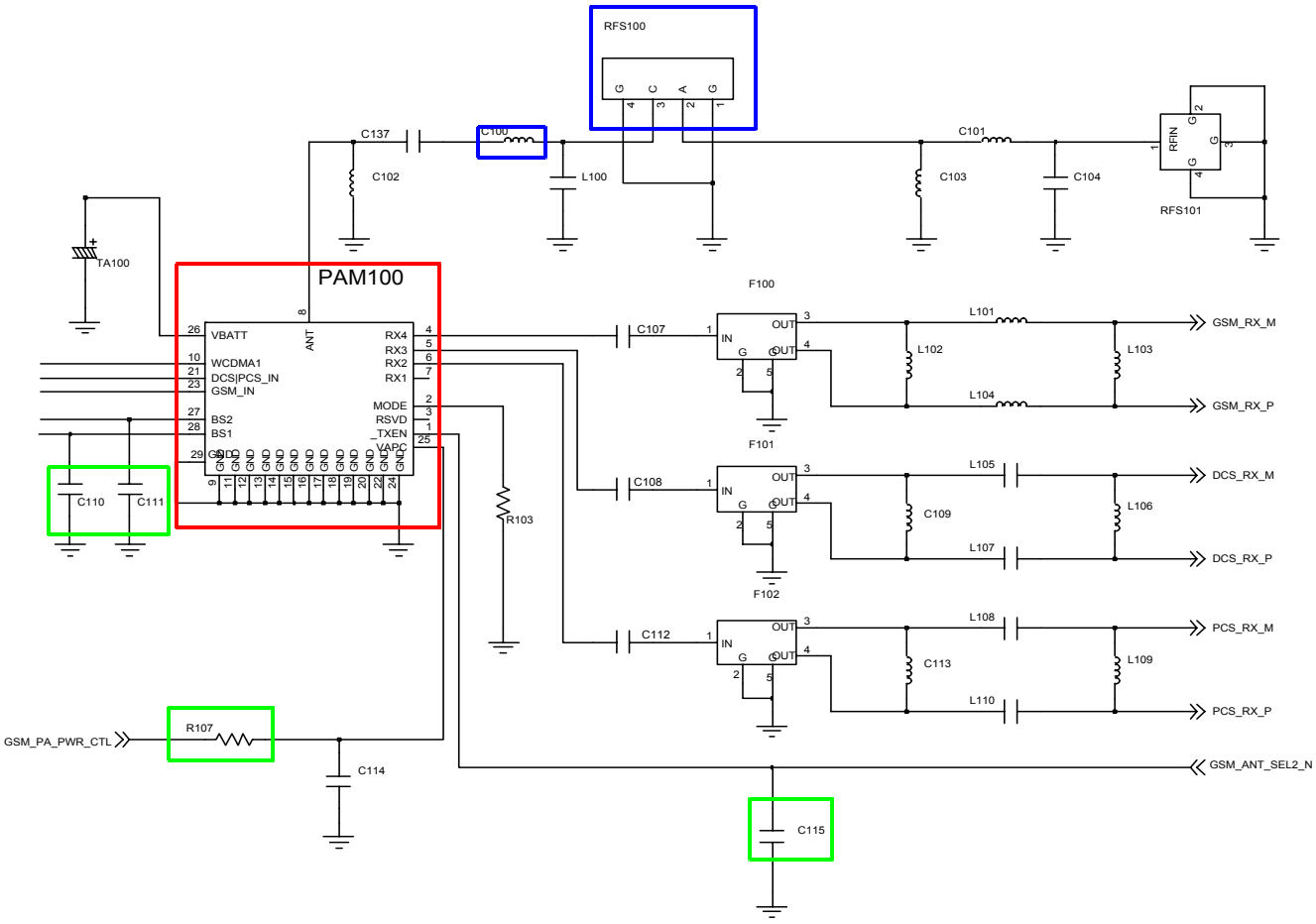

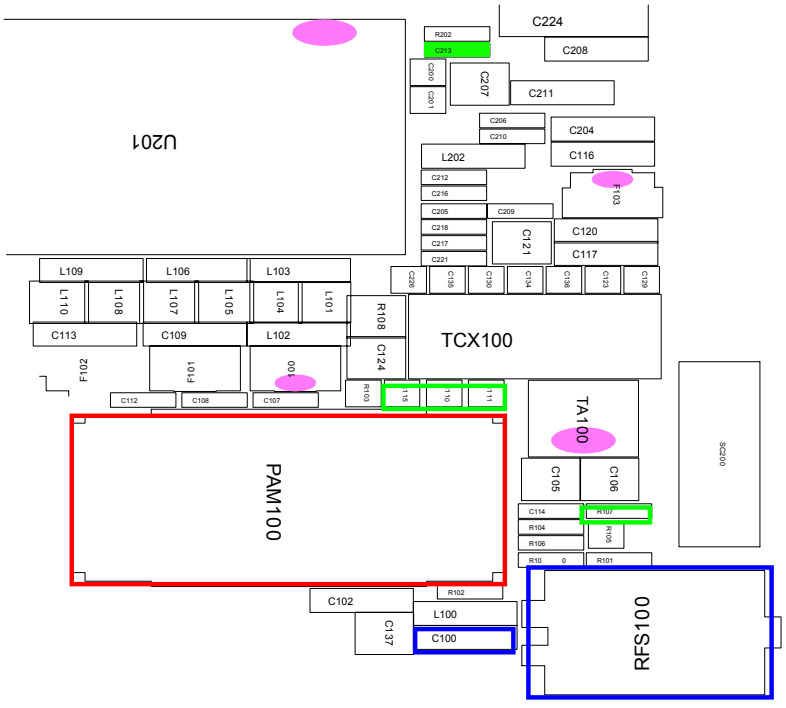

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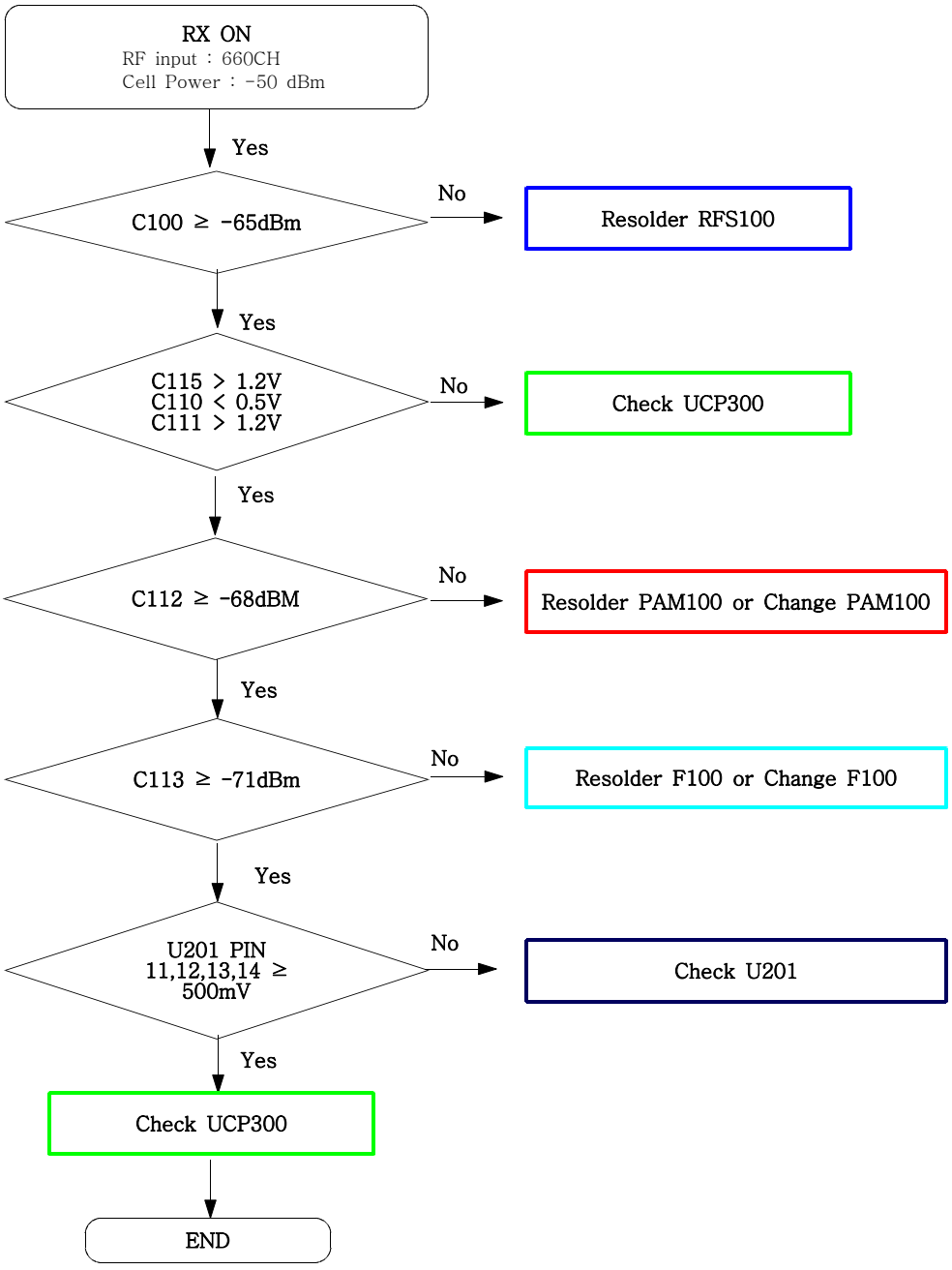
9-16. PCS Receiver



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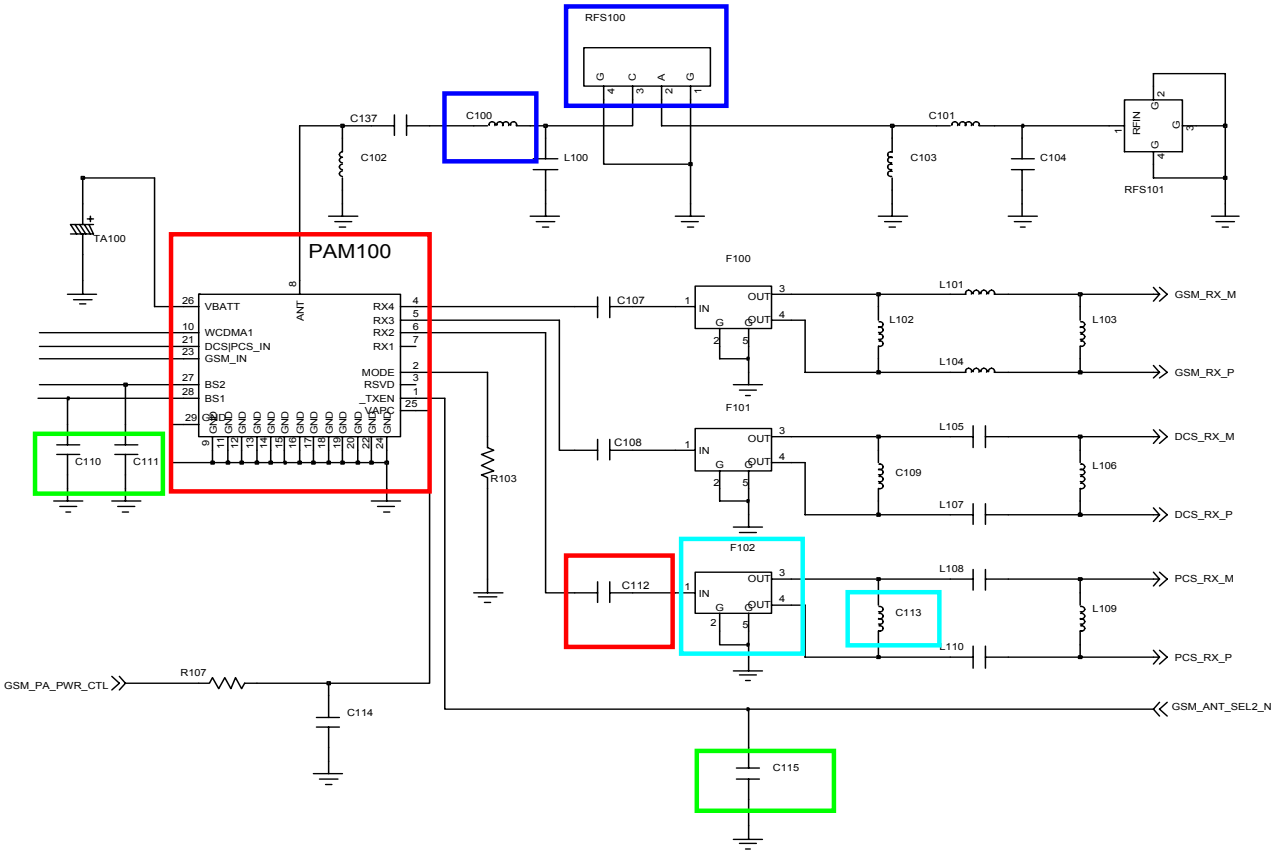

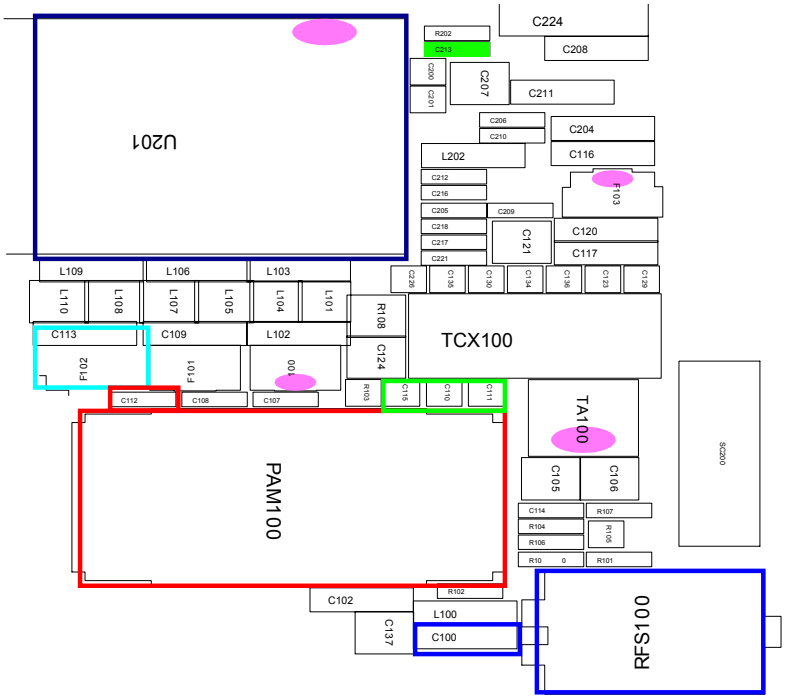

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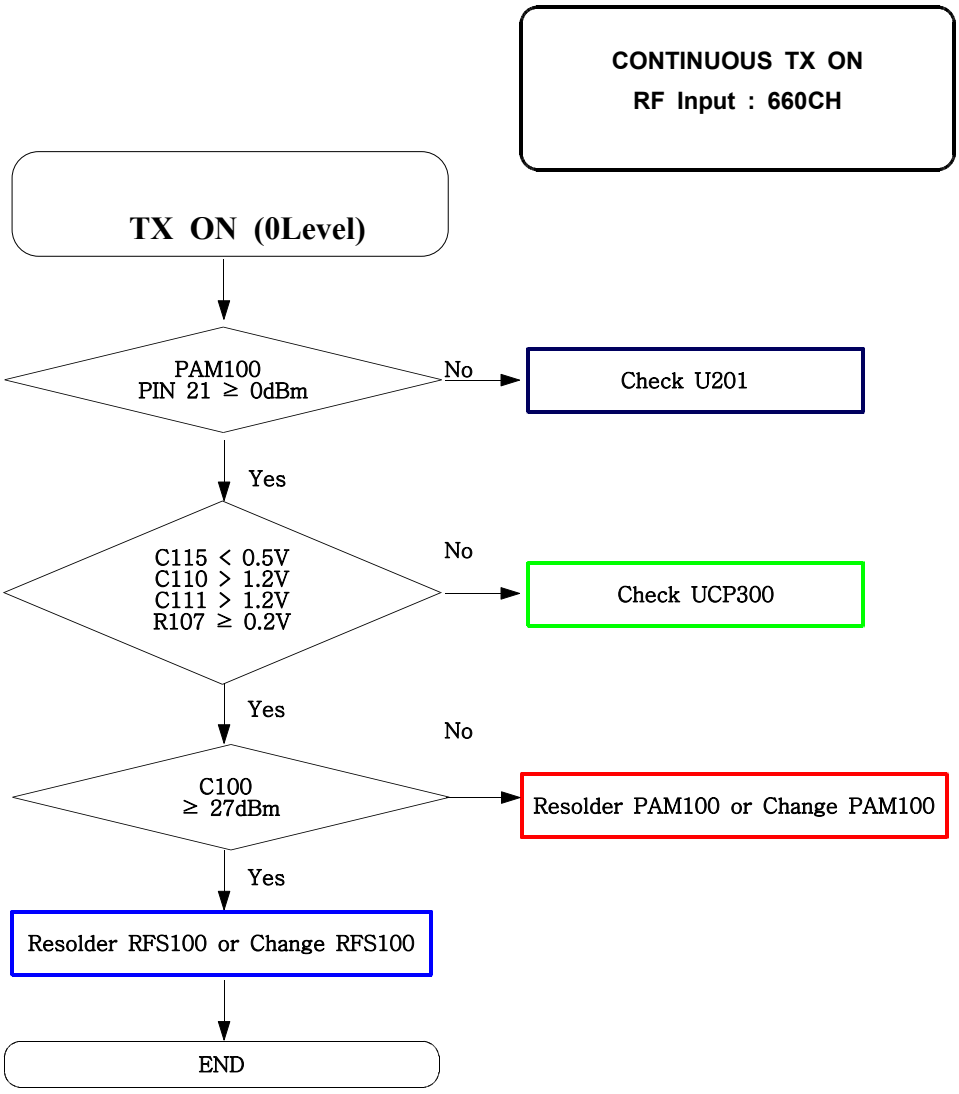
9-17. PCS Transmitter



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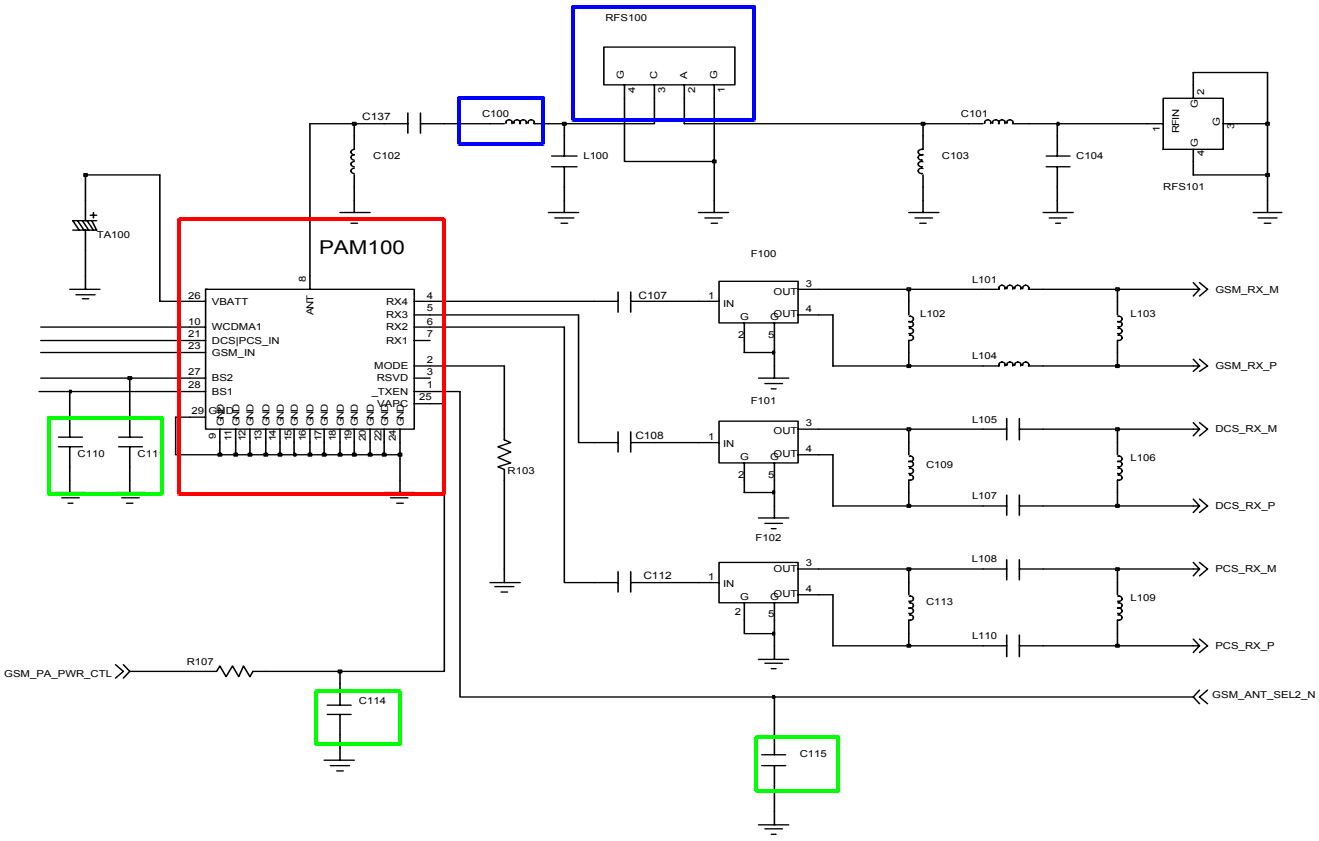

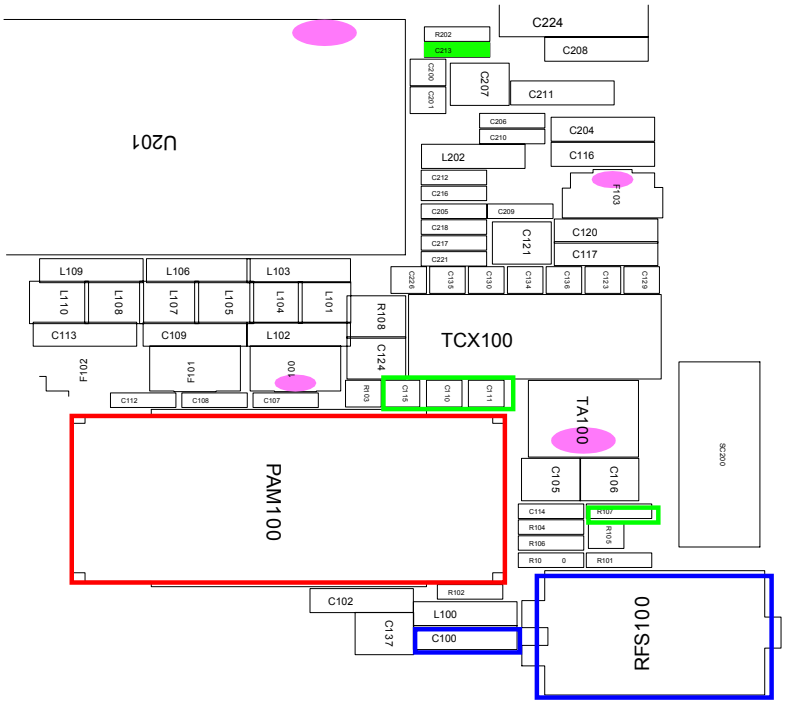

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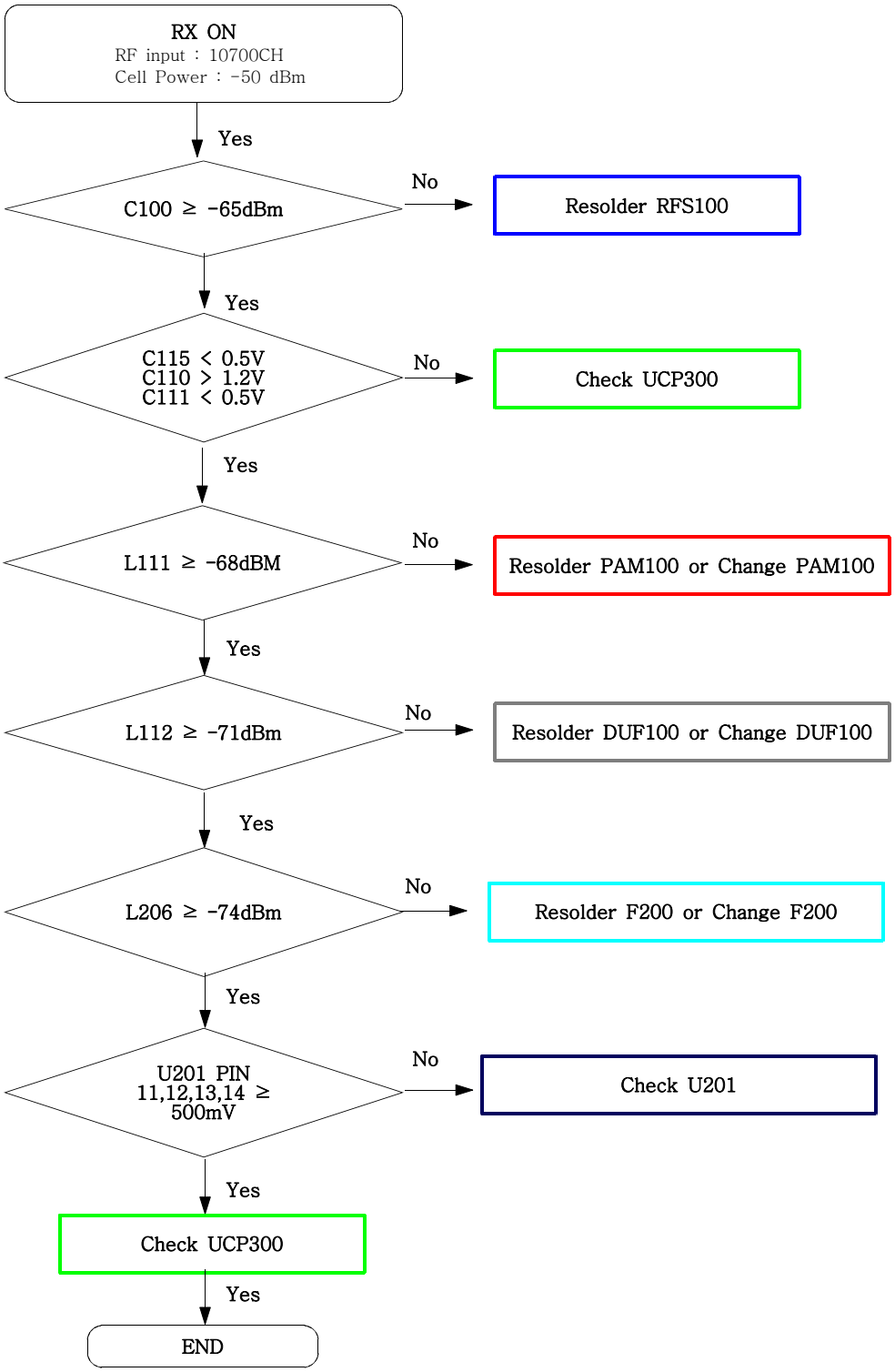
9-18. WCDMA Receiver



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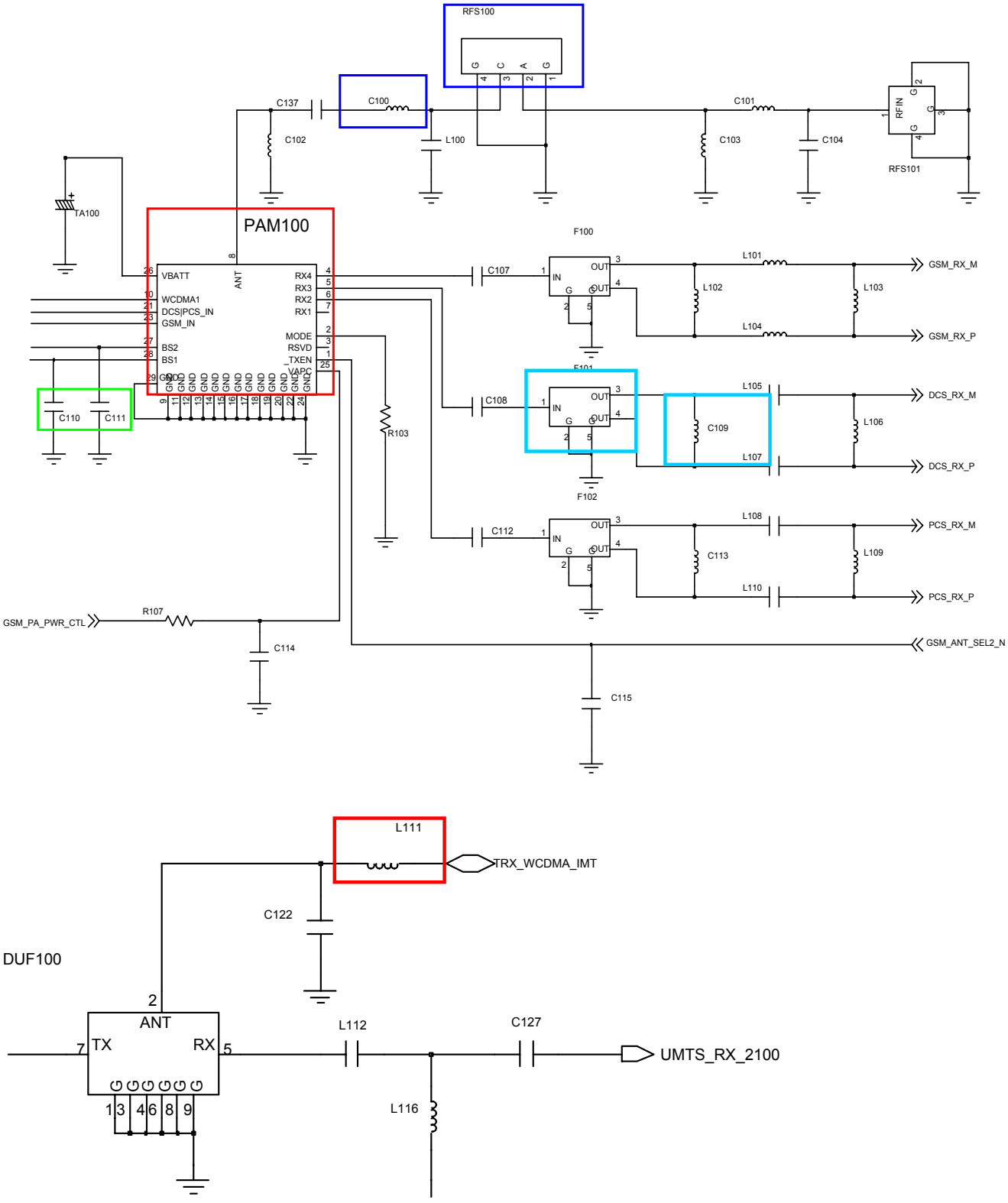

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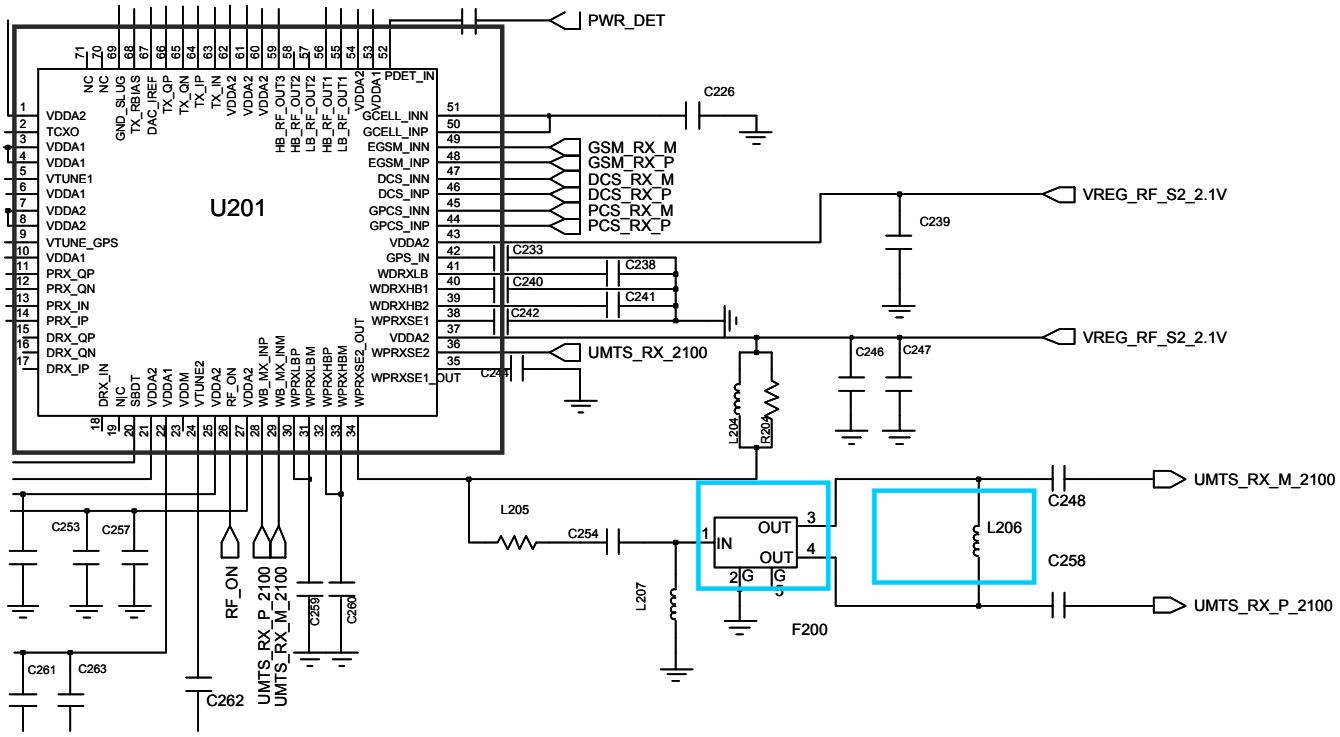

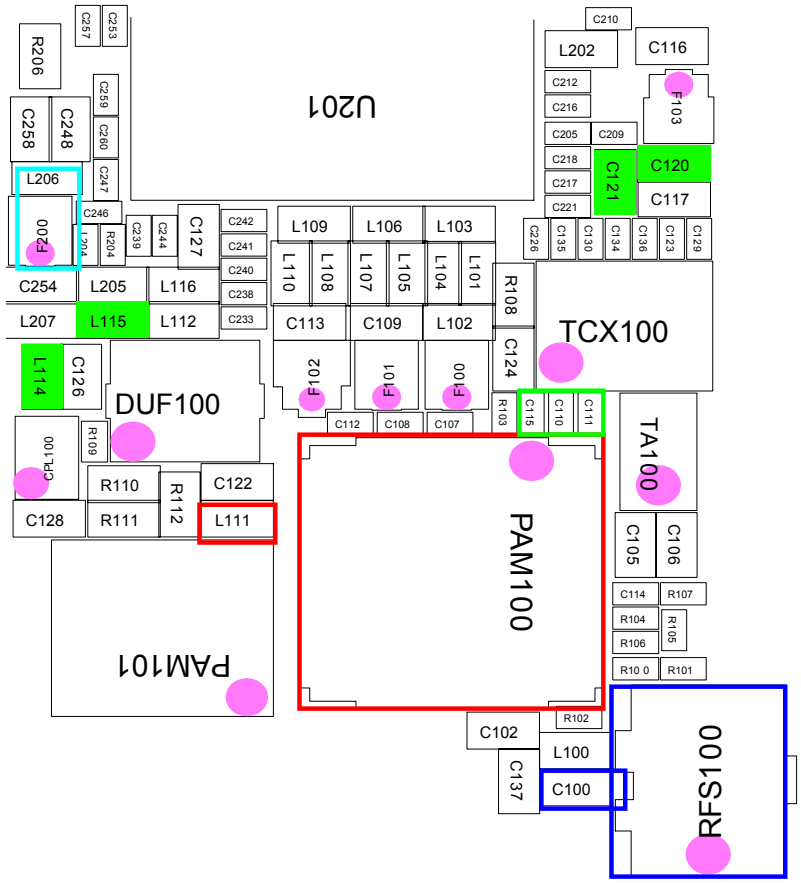

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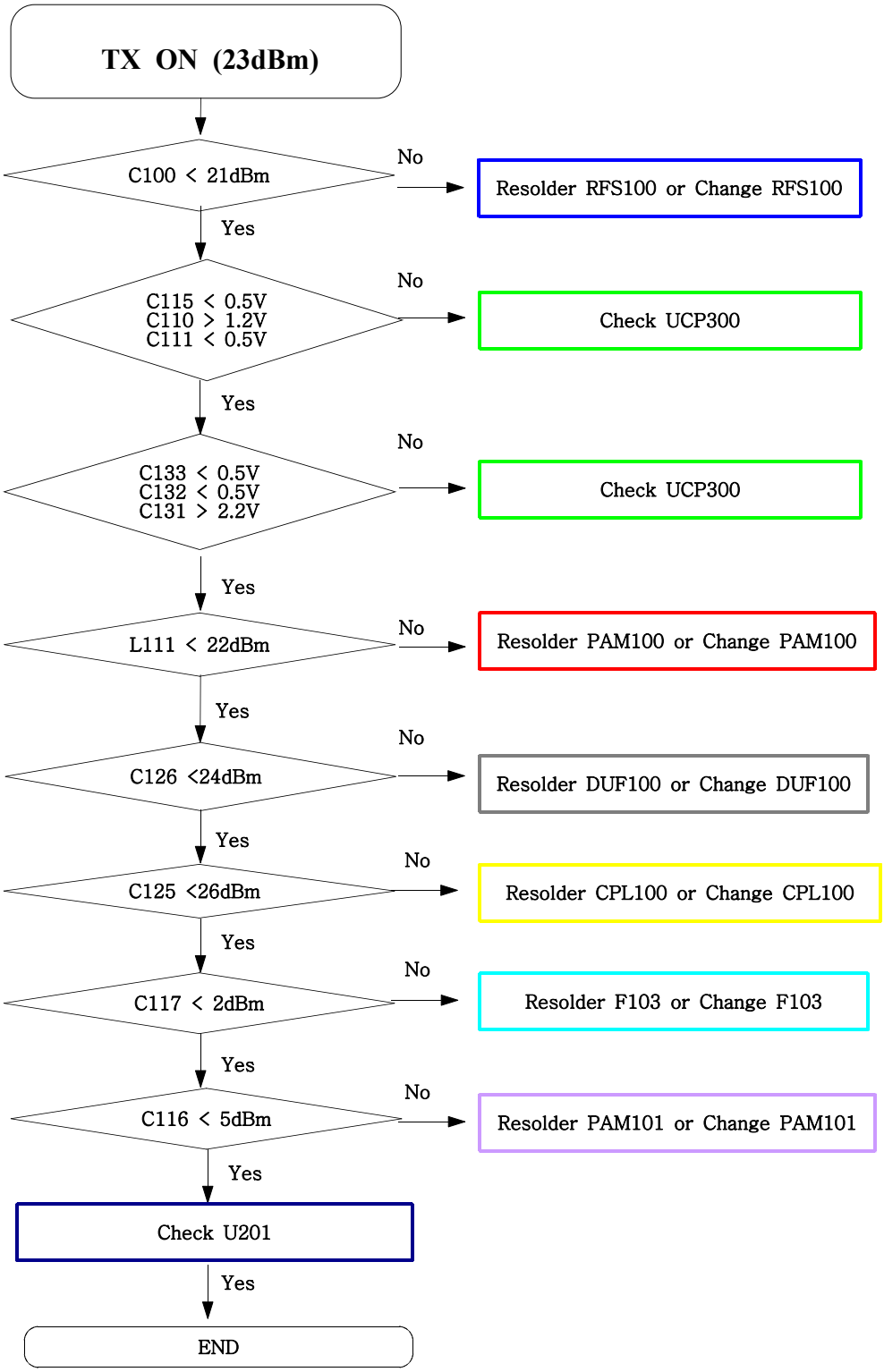
9-18. WCDMA Transmitter



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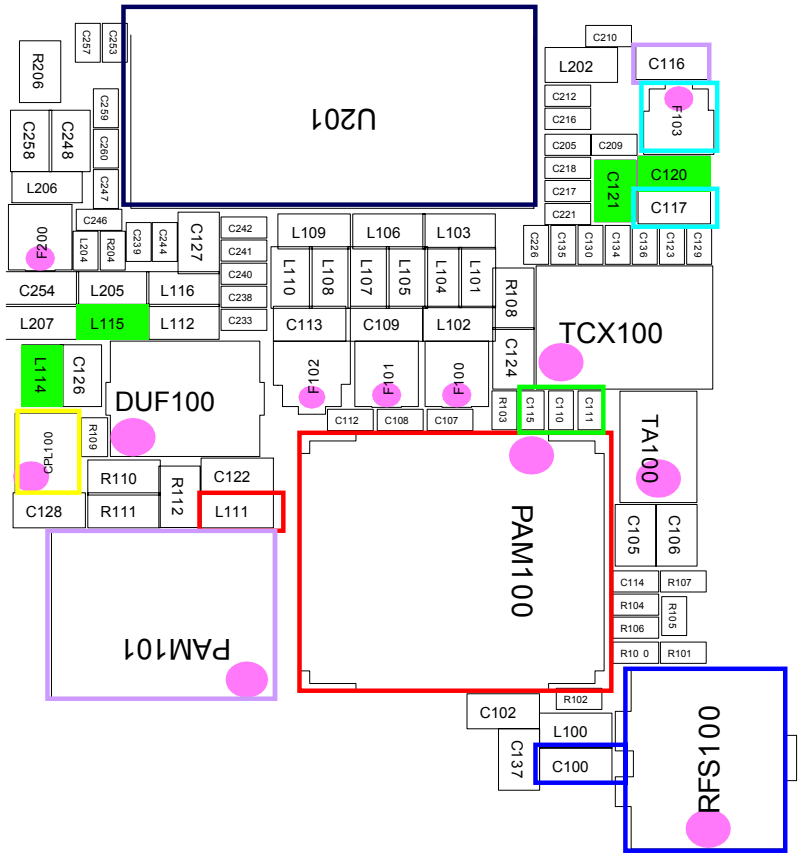

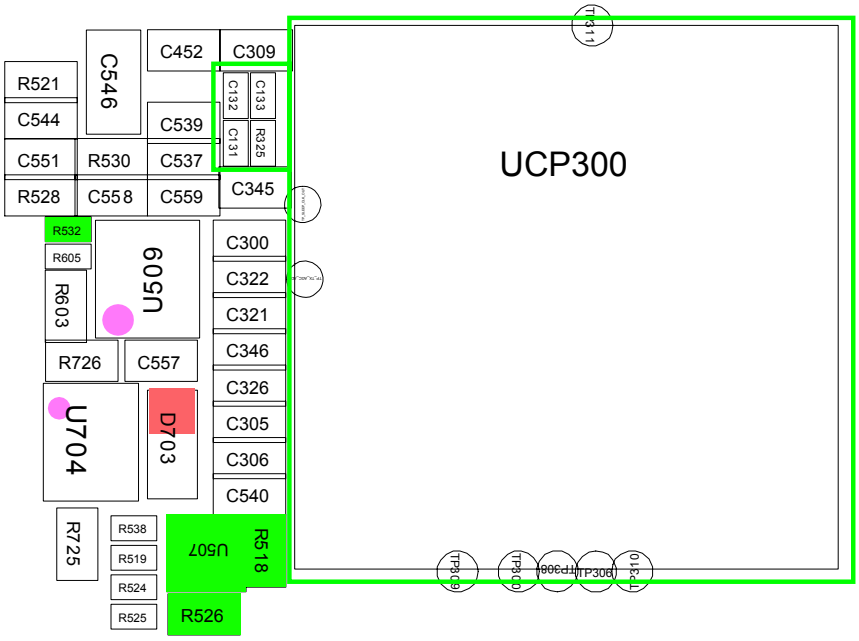

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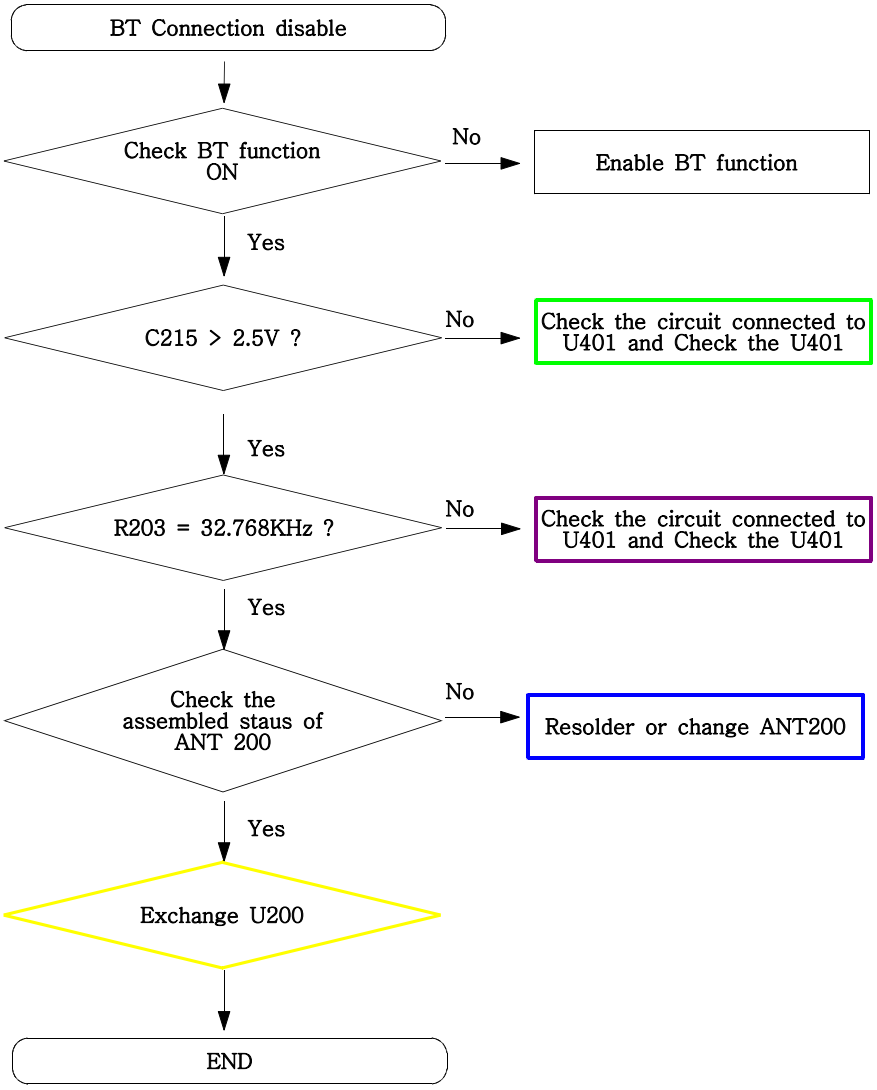
9-20. Bluetooth Part



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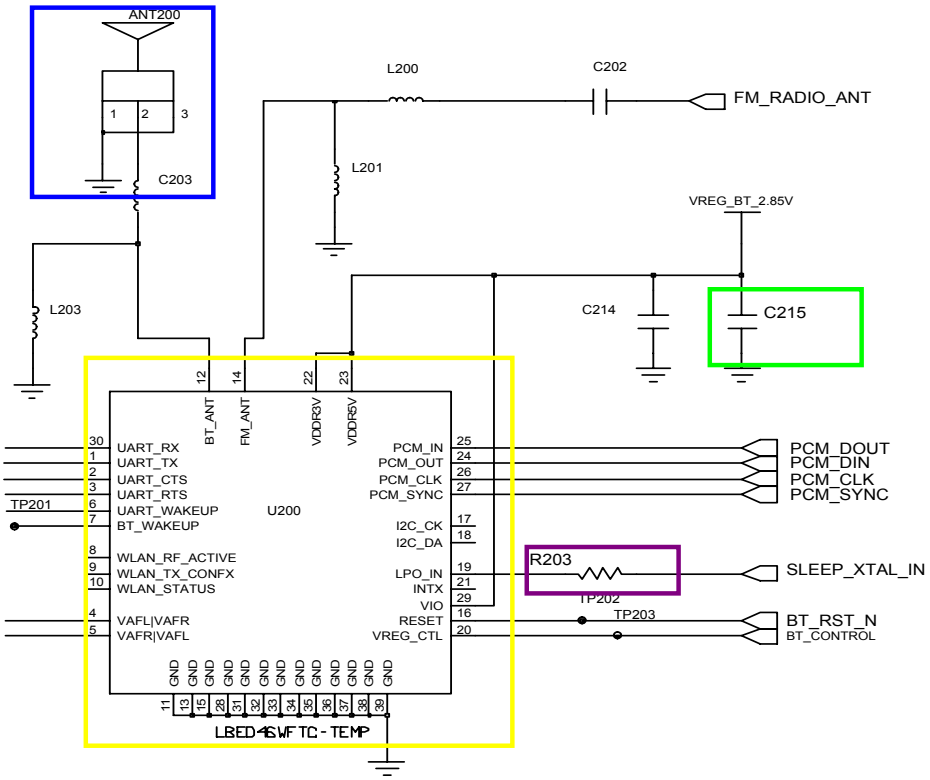

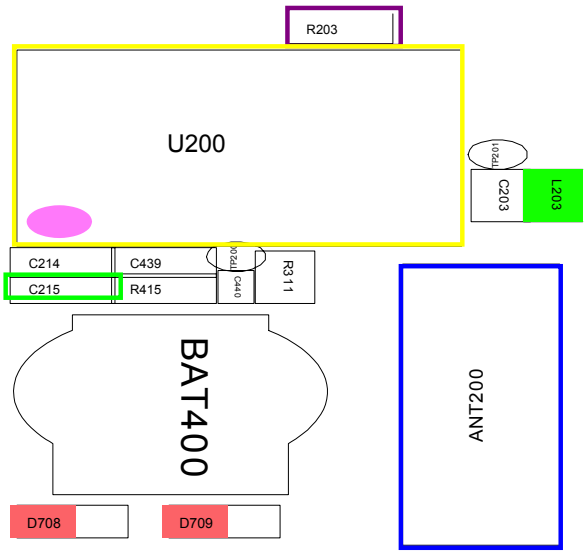

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10. Reference data

Reference Abbreviation

- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** **:** European Standard
- **ES** **:** Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** **:** Transport Stream

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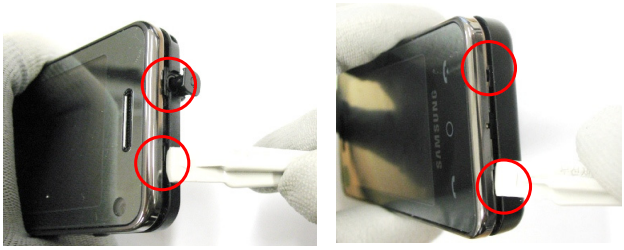
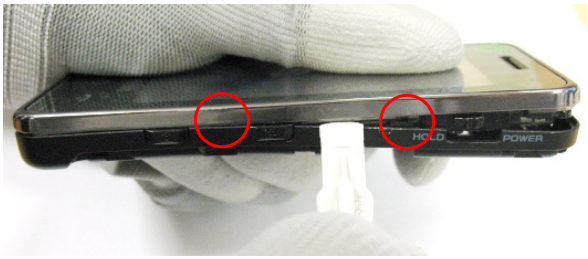
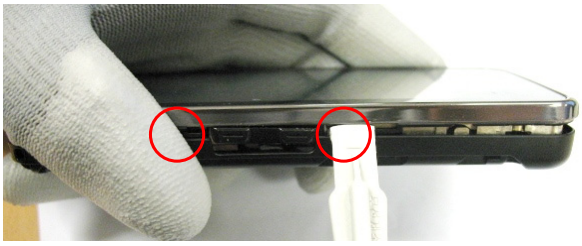
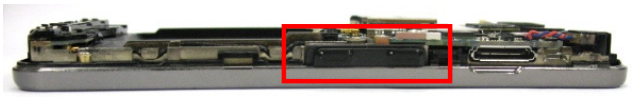
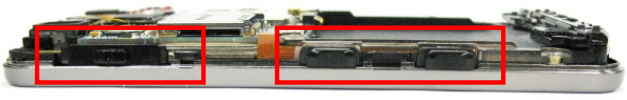
11. Disassembly and Assembly Instructions

11-1. Disassembly Instructions

1 1) Unscrew 6 points in the rear case. 	2 1)After EAR COVER with picture does OPEN Separate upper/lower column each 2POINTs' LOCKER. 
1) Notice the rear case should not be damaged or scratched.	1) Notice the rear case should not be damaged or scratched.
3 Separate REAR after separate left/right each 2 POINTs' LOCKER.  	4 Separate volume key, camera key,power on key.  
1) Notice the rear case should not be damaged or scratched.	

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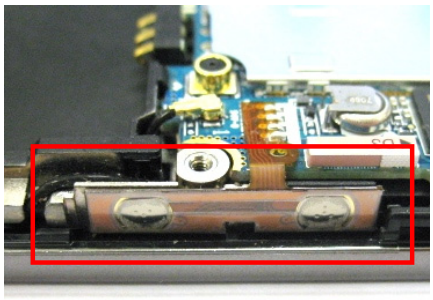
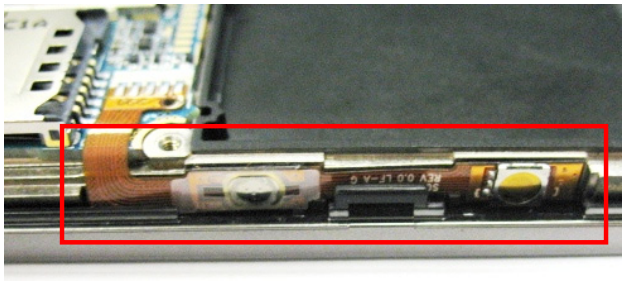
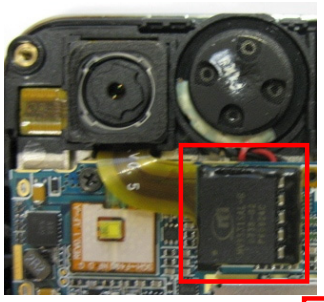
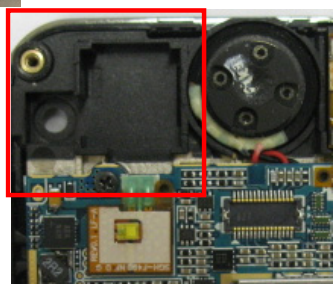
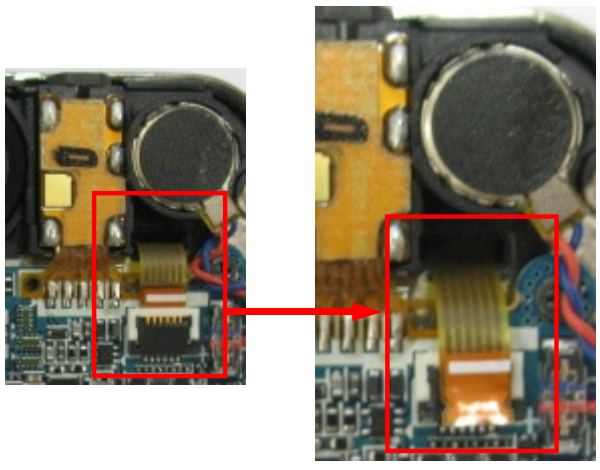
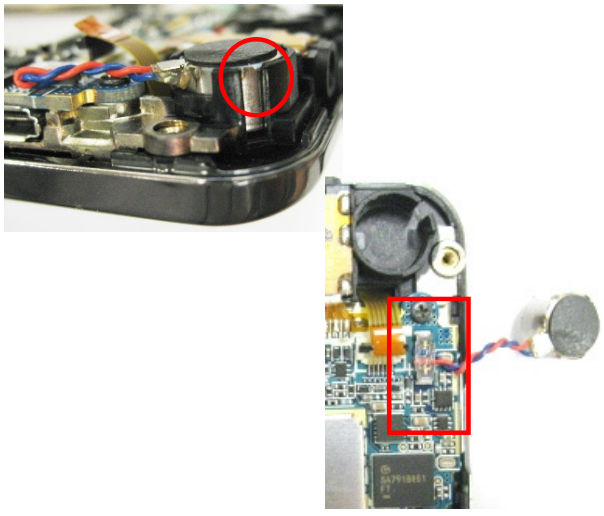
5 1)Volume KEY,camera KEY FPCB does take off.  	6 1)Separate camera connector. 2)Separate camera module in Bracket.  
1)Observe to FPCB's that get taken, that tear.	1)Observe to FPCB's that get taken, that tear.
7 After ACTUATOR of TSP FPCB connector does OPEN, TSP FPCB does take off. 	8 1) Use decomposition groove take off the motor. 2) Do motor take off in motor connector. 
1)Take care so that parts breakdown may not occur. 2)Observe to FPCB's that get taken, that tear.	1)Take care so that motor wire may not damage. 1)Notice the body should not be damaged or scratched.

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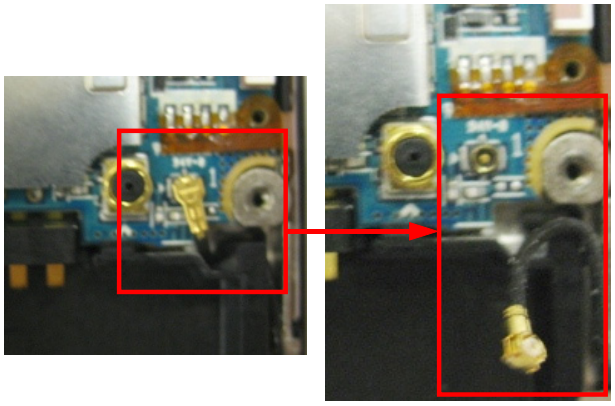
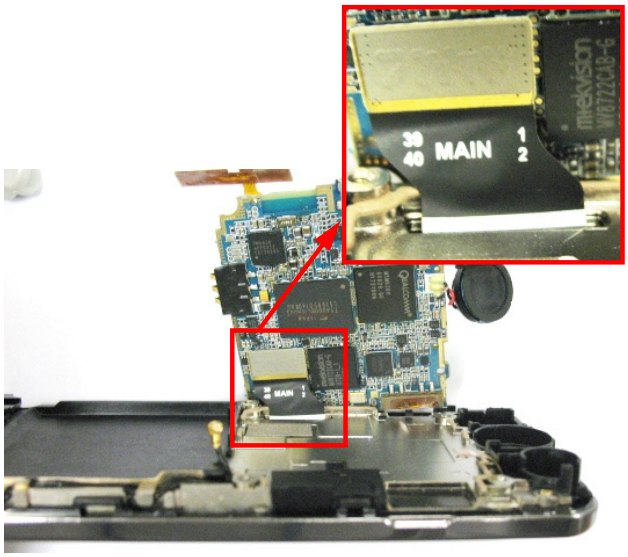
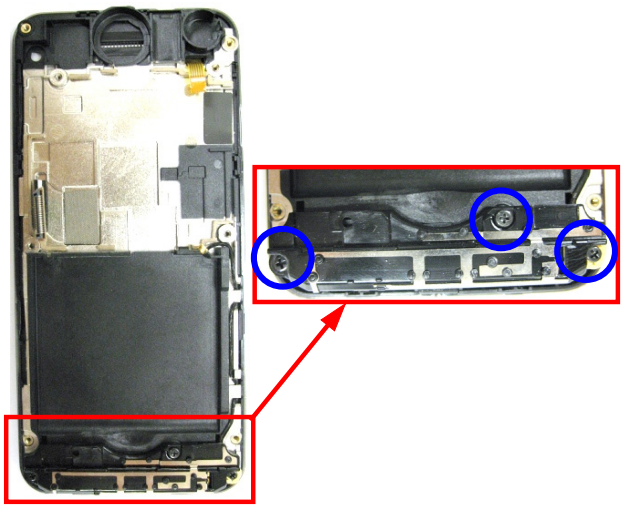
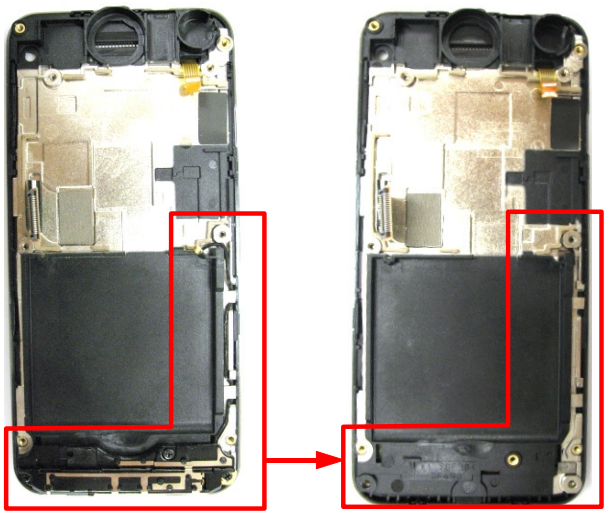
9 Intenna wire does take off. 	10 Lift PBA, separate connector after does take off. 
1)Take care so that Intenna wire may not be damaged.	1)Take care so that parts breakdown may not occur. 2)Observe to FPCB's that get taken, that tear.
11 Unscrew 3 POINTs. 	12 Separate Intenna and Intenna wire. 
	1)Take care so that Intenna wire may not be damaged.

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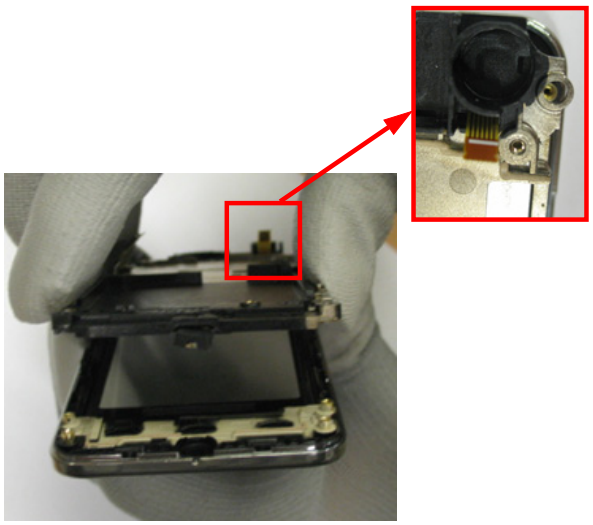
13 1)Separate LCD ASS'Y lifting LCD ASS'Y. 	
1)Take care so that LCD may not be damaged. 2)Take care so that TSP FPCB may not be damaged.	

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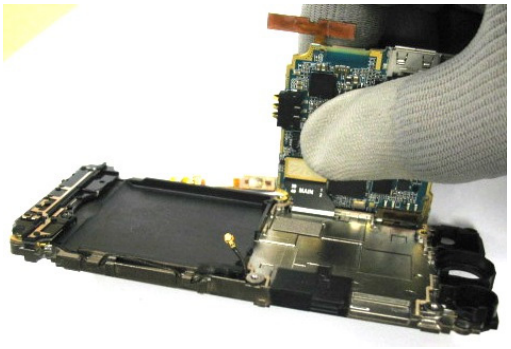
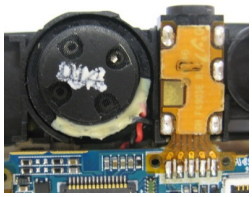
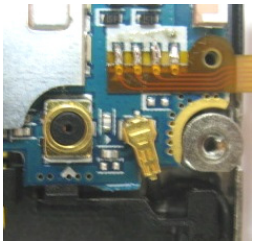
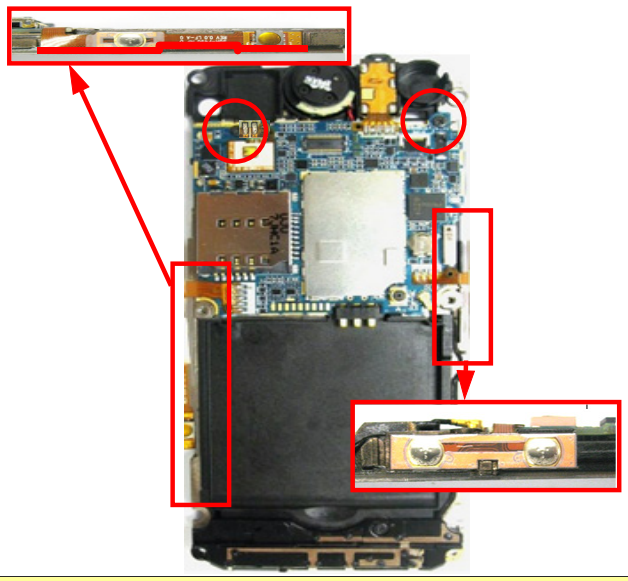
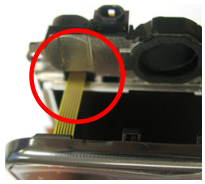
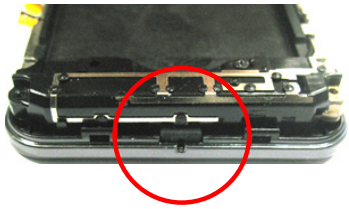
11-2. Assembly Instructions

1 1)Connect LCD CONNECTOR. 	2 1)After put PBA, put speaker & ear jack connector. 2)Assemble INTENNA WIRE.  
1)Connect so that connector may be sonant.	1)Press so that Intena may not grow restless once more.
3 1) Screw PBA 2 points. 2) Attach SIDE KEY class. 	4 1) Pass TSP FPCB in BRACKET's groove. 2) Set microphone 3) Set LCD ASS'Y  
1) Notice the FPCB not be damaged.	1) Notice the FPCB not be damaged. 2) Make MIC be arrived correctly in the groove.

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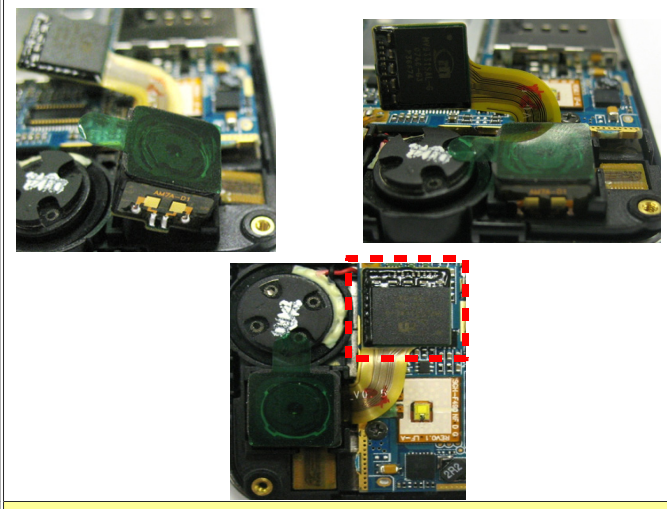
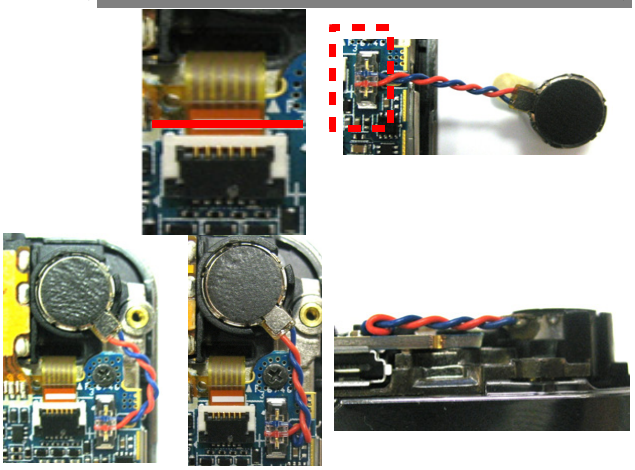
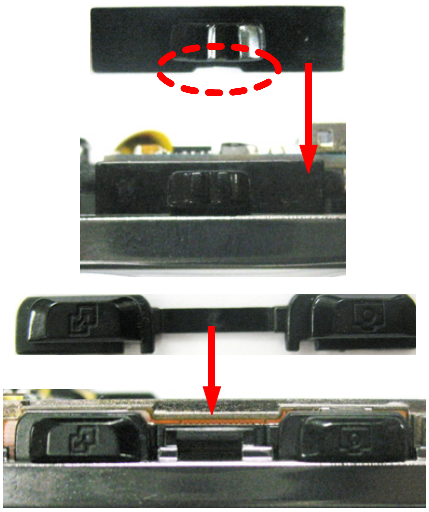
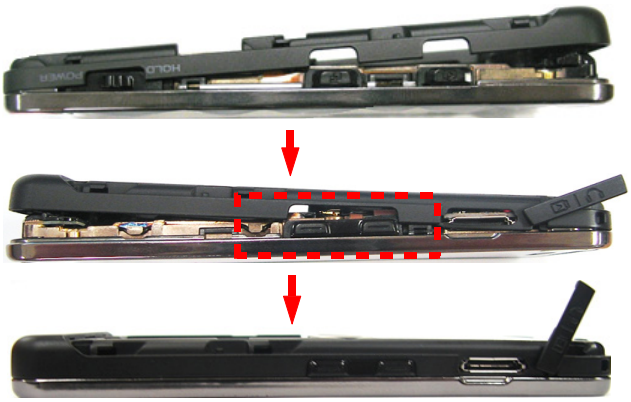
5 1) SET QCIF camera in the groove. 2) SET MEGA camera in the groove. 3) Connect the Camera 	6 1) Sets to standard SILK line and inserts TSP FPCB. 2)After Connect MOTOR, Set Motor in the groove. 3) Arranges Motor wire. 
1) Notice the FPCB not be damaged	1) Make TSP FPCB be inserted perfectly. 2)Take care so that motor wire may not lean under board.
7 1) SET Power on key, Camera key. 	8 1) Put REAR via the top portion. 2) Insert volume key. 3) Assemble REAR. 
1)Observe on direction of side key	1) Notice the rear case should not be damaged or scratched. 2)Assemble to take all to HOOK.

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5 1) Screw 6 points in the rear case. 	
1) Notice the rear case should not be damaged or scratched.	

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